

ST MARY CATHOLIC SCHOOL

WINDOW REPLACEMENT

340 Leacock Drive, Barrie, Ontario

salter pilon architecture inc.

Project Manual

Divisions 0-33

Project Number: 25001

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CONSULTANT'S SEAL

This seal governs all Documents and Sections of these
Specifications, except Section 00 30 00 – Existing Conditions.

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END OF SECTION

1 GENERAL

- .1 Information on existing conditions made available to bidders under this section, is included in the Bid Documents and forms part of the Contract Documents.
- .2 The Owner and Consultant assume no responsibility for the scope and accuracy of the information contained in the documents listed herein.
- .3 The Contractor shall be responsible for conducting an on-site evaluation of conditions which can be observed and for correlation of these conditions with the information included under this section.
- .4 Information contained in documents listed here is for use by the Contractor to assist in an assessment of existing conditions. Evaluation of the information shall remain the responsibility of the Contractor.

2 REPORTS

- .1 Reports on site conditions for guidance in design and construction are appended to this document. The recommendations indicated in the Reports are a requirement of the Contract:
- .2 Refer to Appendices for all reports.

END OF SECTION

**SUPPLEMENTARY CONDITIONS & AMENDMENTS TO STANDARD CONSTRUCTION DOCUMENT
CCDC2 -2020 STIPULATED PRICE CONTRACT
(the “Supplementary Conditions”)**

**AGREEMENT, DEFINITIONS, AND
GENERAL CONDITIONS**

The Standard Construction Document CCDC 2 2020 for a Stipulated Price Contract, English version, consisting of the Agreement Between *Owner* and Contractor, Definitions and General Conditions of the Stipulated Price Contract, Parts 1 to 13 inclusive, governing same, together with the changes with the new *Construction Act* is hereby made part of these *Contract Documents*, with the following amendments, additions and modifications:

AGREEMENT BETWEEN OWNER AND CONTRACTOR

SC1 ARTICLE A-1 – THE WORK

SC1.1	A-1.3	<p><u>Amend</u> Article A-1.3 by <u>deleting</u> all of the words after “<i>Contract Documents</i>” and <u>replace</u> them with the following”</p> <p>“attain</p> <p>.1 <i>Substantial Performance of the Work</i> by the ___ day of _____ in the year 20__.</p> <p>.2 (if applicable) <i>Occupancy</i> by the ___ day of _____ in the year 20__, and</p> <p>.3 <i>Ready-for-Takeover</i> by the ___ day of _____ in the year 20__.”</p>
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SC2 ARTICLE A-3 – CONTRACT DOCUMENTS

SC2.13	A-3.1	<p><u>Add</u> the following documents to the list of <i>Contract Documents</i> in Article A-3.1:</p> <ul style="list-style-type: none"> • Simcoe Muskoka Catholic District School Board's Supplementary Conditions & Amendments to Standard Construction Document CCDC2-2020 Stipulated Price Subcontract, November 2020 Version, including any Special Supplementary Conditions listed in Appendix 2 thereto • <i>Drawings</i> • <i>Specifications</i> • Performance Bond (Form 32 -Performance Bond under Section 85.1 of the <i>Act</i>) • Labour and Material Payment Bond (Form 31 – Labour and Material Payment Bond under Section 85.1 of the <i>Act</i>)
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SC3 ARTICLE A-4 – CONTRACT PRICE

SC3.1	A-4.4	<p><u>Delete</u> Article A-4.4 and <u>replace</u> it with the following:</p> <p>“4.4 The <i>Contract Price</i> shall remain fixed for the duration of the <i>Contract Time</i>, subject only to adjustments as provided for in the <i>Contract Documents</i>. For certainty, and without limiting the general application of the preceding sentence, the <i>Contractor</i> assumes all risks in connection with cost increases for overhead, <i>Products</i>, <i>Labour</i>, and <i>Construction Equipment</i> prescribed by the <i>Contract Documents</i> for the performance of the <i>Work</i>, and the <i>Contractor</i> assumes all responsibility for liabilities and additional costs that may arise as a result of the <i>Contractor's</i> inclusion of any <i>Product</i>, <i>Construction Equipment</i>, <i>Supplier</i>, or <i>Subcontractor</i> in its calculation of the <i>Contract Price</i>.”</p>
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SC4 ARTICLE A-5 – PAYMENT

SC4.1	A-5.1	<p><u>Delete</u> Article A- 5.1 in its entirety including all subparagraphs and <u>replace</u> it with the following:</p> <p>“5.1 Subject to the provisions of the <i>Contract Documents</i> and the <i>Construction Act</i>, the <i>Owner</i> shall:</p> <ol style="list-style-type: none"> .1 make progress payments to the <i>Contractor</i> on account of the <i>Contract Price</i> when due together with such <i>Value Added Taxes</i> as may be applicable to such payments, .2 upon <i>Substantial Performance of the Work</i> as certified by the <i>Consultant</i>, and on the 61st day after the publication of the certificate of <i>Substantial Performance of the Work</i>, in accordance with the <i>Construction Act</i>, there being no claims for lien registered against the title to the <i>Place of the Work</i> and no written notices of lien delivered to the <i>Owner</i>, pay the <i>Contractor</i> the unpaid balance of the holdback, together with such <i>Value Added Taxes</i> as may be applicable to such payment, less any amount stated in the <i>Owner’s Notice of Non-Payment</i>. .3 after <i>Ready-for-Takeover</i> has been achieved in accordance with the <i>Contract Documents</i> and the <i>Work</i> is complete, there being no claims for lien registered against the title to the <i>Place of the Work</i> and no written notices of lien delivered to the <i>Owner</i>, pay the <i>Contractor</i> any unpaid balance of the <i>Contract Price</i> in accordance with GC 5.5 – FINAL PAYMENT, together with such <i>Value Added Taxes</i> as may be applicable to such payment.”
SC 4.2	A-5.2.1	<p><u>Delete</u> subparagraph 5.2.1 in its entirety and <u>replace</u> it with the following:</p> <p>“.1 Should either party fail to make payments as they become due under the terms of the <i>Contract</i> or in an award by arbitration or court, interest shall also become due and payable on such unpaid amounts at the prejudgment interest rate prescribed by the <i>Courts of Justice Act</i> (Ontario), as it may change from time to time.”</p>

SC5 *NEW* ARTICLE A-9 – CONFLICT OF INTEREST

SC5.1	A-9	<p><u>Add</u> new ARTICLE A-9 CONFLICT OF INTEREST as follows:</p> <p>“ARTICLE A-9 CONFLICT OF INTEREST</p> <ol style="list-style-type: none"> 9.1 The <i>Contractor</i>, <i>Subcontractors</i> and <i>Suppliers</i> and any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall not engage in any activity or provide any services where such activity or the provision of such services creates a conflict of interest (actually or potentially, in the sole opinion of the <i>Owner</i>) with the provision of the <i>Work</i> pursuant to the <i>Contract</i>. The <i>Contractor</i> acknowledges and agrees that a conflict of interest, as described in this Article A-9, includes, but is not limited to, the use of <i>Confidential Information</i> where the <i>Owner</i> has not specifically authorized such use. 9.2 The <i>Contractor</i> shall disclose to the <i>Owner</i>, in writing, without delay, any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest, including the retention of any <i>Subcontractor</i> or <i>Supplier</i> that is directly or indirectly affiliated with or related to the <i>Contractor</i>. 9.3 The <i>Contractor</i> covenants and agrees that it will not hire or retain the services of any employee or previous employee of the <i>Owner</i> where to do so constitutes a breach by such employee or previous employee of the <i>Owner’s</i> conflict of interest policy, as it
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		<p>may be amended from time to time, until after completion of the <i>Work</i> under the <i>Contract</i>.</p>
	9.4	<p>It is of the essence of the <i>Contract</i> that the <i>Owner</i> shall not have direct or indirect liability to any <i>Subcontractor or Supplier</i>, and that the <i>Owner</i> relies on the maintenance of an arm's-length relationship between the <i>Contractor</i> and its <i>Subcontractors and Suppliers</i>. Consistent with this fundamental term of the <i>Contract</i>, the <i>Contractor</i> will not enter into any agreement or understanding with any <i>Subcontractor or Supplier</i>, whether as part of any contract or any written or oral collateral agreement, pursuant to which the parties thereto agree to cooperate in the presentation of a claim for payment against the <i>Owner</i>, directly or through the <i>Contractor</i>, where such claim is, in whole or in part, in respect of a disputed claim by the <i>Subcontractor or Supplier</i> against the <i>Contractor</i>, where the payment to the <i>Subcontractor or Supplier</i> by the <i>Contractor</i> is agreed to be conditional or contingent on the ability to recover those amounts or a portion thereof from the <i>Owner</i>, failing which the <i>Contractor</i> shall be saved harmless from all or a portion of those claims. The <i>Contractor</i> acknowledges that any such agreement would undermine the required arm's-length relationship and constitute a conflict of interest. For greater certainty, the <i>Contractor</i> shall only be entitled to advance claims against the <i>Owner</i> for amounts pertaining to <i>Subcontractor or Supplier</i> claims where the <i>Contractor</i> has actually paid or unconditionally acknowledged liability for those claims or where those claims are the subject of litigation or binding arbitration between the <i>Subcontractor or Supplier</i> and the <i>Contractor</i> has been found liable for those claims.</p>
	9.5	<p>Notwithstanding paragraph 7.1.2 of GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT, a breach of this Article A-9 by the <i>Contractor</i>, any of the <i>Subcontractors</i>, or any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall entitle the <i>Owner</i> to terminate the <i>Contract</i>, in addition to any other rights and remedies that the <i>Owner</i> has in the <i>Contract</i>, in law, or in equity."</p>

SC6 *NEW* ARTICLE A-10 TIME OF THE ESSENCE

SC6.13	Article A-10	<p><u>Add</u> the following new Article A-10 as follows:</p> <p>"ARTICLE A-10 TIME OF THE ESSENCE</p> <p>10.1 It is agreed that one of the reasons the <i>Contractor</i> was selected by the <i>Owner</i> for this <i>Contract</i> is the <i>Contractor's</i> representation and covenant that it will attain <i>Substantial Performance, Occupancy</i> (if applicable), and <i>Ready-for-Takeover</i> within the <i>Contract Time</i> stated in Article A-1 of this <i>Contract</i>.</p> <p>10.2 The <i>Contractor</i> acknowledges and agrees that it is responsible to marshal its resources and those of its <i>Subcontractors and Suppliers</i> in a manner which will permit timely attainment of <i>Substantial Performance, Occupancy</i> (if applicable), and <i>Ready-for-Takeover</i>. The <i>Contractor</i> agrees that time is of the essence of this <i>Contract</i>."</p>
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SC7 DEFINITIONS

<i>Revisions to Existing Definitions</i>		
SC7.1	Consultant	<p><u>Amend</u> the definition of "Consultant" by <u>adding</u> the following to the end of the definition:</p>

		"For the purposes of the <i>Contract</i> , the terms " <i>Consultant</i> ", " <i>Architect</i> " and " <i>Engineer</i> " shall be considered synonymous."
SC7.2	Payment Legislation/Construction Act	<p><u>Delete</u> the Definition of <i>Payment Legislation</i> and replace it with "Construction Act" as follows:</p> <p>"Construction Act</p> <p><i>Construction Act</i> means the <i>Construction Act</i>, R.S.O. 1990, c. C.30, as amended, including all regulations passed under it that are enforceable as of the date of execution of this <i>Contract</i>. For certainty, the first procurement process for the <i>Project</i> (i.e., the "improvement" as that term is defined in the <i>Construction Act</i>) was commenced on or after October 1, 2019."</p>
SC7.3	Ready-for-Takeover	<u>Amend</u> the Definition of <i>Ready-for-Takeover</i> by deleting all the words after "as verified" and replacing them with "and approved by the <i>Owner</i> ."
New Definitions		
SC7.4	Adjudication	<p><u>Add</u> the following definition:</p> <p>"Adjudication</p> <p><i>Adjudication</i> means construction dispute interim adjudication as defined under the <i>Construction Act</i>."</p>
SC7.5	Close-Out Documentation	<p><u>Add</u> the following new definition:</p> <p>"Close-Out Documentation</p> <p><i>Close-Out Documentation</i> has the meaning given to it under GC 5.4.2."</p>
SC7.6	Confidential Information	<p><u>Add</u> the following definition:</p> <p>"Confidential Information</p> <p><i>Confidential Information</i> means all the information or material of the <i>Owner</i> that is of a proprietary or confidential nature, whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description (such as drawings and move-lists) which is communicated to or comes into the possession or control of the <i>Contractor</i> at any time, but <i>Confidential Information</i> shall not include information that:</p> <ol style="list-style-type: none"> .1 is or becomes generally available to the public without fault or breach on the part of the <i>Contractor</i>, including without limitation breach of any duty of confidentiality owed by the <i>Contractor</i> to the <i>Owner</i> or to any third party, but only after that information becomes generally available to the public; .2 the <i>Contractor</i> can demonstrate to have been rightfully obtained by the <i>Contractor</i> from a third party who had the right to transfer or disclose it to the <i>Contractor</i> free of any obligation of confidence; .3 the <i>Contractor</i> can demonstrate to have been rightfully known to or in the possession of the <i>Contractor</i> at the time of disclosure, free of any obligation of confidence; or .4 is independently developed by the <i>Contractor</i> without use of any <i>Confidential Information</i>."
SC7.7	Construction Schedule	<p><u>Add</u> the following definition:</p> <p>"Construction Schedule</p> <p><i>Construction Schedule</i> means the schedule for the performance of the <i>Work</i> provided by the <i>Contractor</i>, and approved by the <i>Owner</i>, pursuant to GC 3.4.1,</p>

		including any amendments to the <i>Construction Schedule</i> made pursuant to the <i>Contract Documents</i> .”
SC7.8	Construction Schedule Update	<p><u>Add</u> the following definition:</p> <p>“Construction Schedule Update</p> <p><i>Construction Schedule Update</i> means an update to the <i>Construction Schedule</i> by the <i>Contractor</i> using Microsoft Project (or other approved scheduling software) that accurately depicts the progress of the <i>Work</i> relative to the critical path established in the <i>Construction Schedule</i> approved in GC 3.5.1 (or any approved successor <i>Construction Schedule</i>), aligns with the currently approved date for <i>Substantial Performance of the Work</i>, shows up-to-date projected major activity sequences and durations, and shows any changes or delays in anticipated completion dates of major activities in the <i>Work</i> relative to the last <i>Construction Schedule Update</i>, and includes the following minimum deliverables:</p> <ul style="list-style-type: none"> (a) a record version of the updated <i>Construction Schedule</i> in .pdf format; (b) an editable copy of the updated original digital file of the <i>Construction Schedule</i> (e.g., .mpp format files for Microsoft Project).”
SC7.9	Direct Costs	<p><u>Add</u> the following definition:</p> <p>“Direct Costs</p> <p><i>Direct Costs</i> are the reasonable costs of performing the contract or subcontract including costs related to the additional supply of services or materials (including equipment rentals), insurance and surety bond premiums, and costs resulting from seasonal conditions, that would not have been incurred, but do not include indirect damages suffered, such as loss of profit, productivity or opportunity, or any head office overhead costs.”</p>
SC7.10	EFT	<p><u>Add</u> the following definition:</p> <p>“EFT</p> <p><i>EFT</i> has the definition given to it under GC 5.3.2.”</p>
SC7.11	Excess Soil	<p><u>Add</u> the following definition:</p> <p>“Excess Soil</p> <p><i>Excess Soil</i> means “excess soil” as that term is defined under section 3 of the <i>Excess Soil Regulation</i>.”</p>
SC7.12	Excess Soil Regulation	<p><u>Add</u> the following Definition:</p> <p>“Excess Soil Regulation</p> <p><i>Excess Soil Regulation</i> means O. Reg. 406/19: On-Site and Excess Soil Management to the <i>Environmental Protection Act</i>, R.S.O. 1990, c. E.19.”</p>
SC7.13	Final Pre-Invoice Submission Meeting	<p><u>Add</u> the following ne definition:</p> <p>“Final Pre-Invoice Submission Meeting</p> <p><i>Final Pre-Invoice Submission Meeting</i> has the meaning given to it in GC 5.5.1.”</p>

SC7.14	Force Majeure	<p><u>Add</u> the following definition:</p> <p>“Force Majeure</p> <p><i>Force Majeure</i> means any cause, unknown at the effective date of the <i>Contract</i> and beyond either party's control, other than financial difficulties, bankruptcy or insolvency, which prevents the performance by a party, or both, of any of their respective obligations under the <i>Contract</i> and the event of <i>Force Majeure</i> did not arise from a party's default and could not be avoided or mitigated by the exercise of reasonable effort or foresight. <i>Force Majeure</i> includes <i>Labour Disputes</i>; fire; unusual delay by common carriers or unavoidable casualties; delays in obtaining third-party licences, permits, agreements, or approvals (excluding approvals of any <i>Subcontractors</i> or <i>Suppliers</i> of any tier); civil disturbance; emergency acts, orders, legislation, regulations or directives of any government or other public authority; acts of a public enemy; war; riot; sabotage; blockage; embargo; lightning; earthquake; adverse weather conditions but only if substantially beyond the weather norms of the <i>Place of the Work</i>; acts of God; or declared epidemic or pandemic outbreak or other public health emergency (e.g. SARS, COVID-19).”</p>
SC7.15	Install	<p><u>Add</u> the following definition:</p> <p>“Install</p> <p><i>Install</i> means install and connect. <i>Install</i> has this meaning whether or not the first letter is capitalized.”</p>
SC7.16	Labour Dispute	<p><u>Add</u> the following definition:</p> <p>“Labour Dispute</p> <p><i>Labour Dispute</i> means any lawful or unlawful labour problems, work stoppage, labour disruption, strike, job action, slow down, lock-outs, picketing, refusal to work or continue to work, refusal to supply materials, cessation or work or other labour controversy which does, or might, affect the <i>Work</i>.”</p>
SC7.17	Notice of Non-Payment	<p><u>Add</u> the following definition:</p> <p>“Notice of Non-Payment</p> <p><i>Notice of Non-Payment</i> means a notice of non-payment of holdback (Form 6) or a notice of non-payment (Form 1.1) under the <i>Act</i>, as applicable to the circumstances.”</p>
SC7.18	OHSA	<p><u>Add</u> the following definition:</p> <p>“OHSA</p> <p><i>OHSA</i> means the <i>Occupational Health and Safety Act</i>, R.S.O. 1990, c. O.1, as amended, including all regulations thereto.”</p>
SC7.19	Overhead	<p><u>Add</u> the following definition:</p> <p>“Overhead</p> <p><i>Overhead</i> means all site and head office operations and facilities, all site and head office administration and supervision; all duties and taxes for permits and licenses required by the authorities having jurisdiction at the <i>Place of the Work</i>; all requirements of Division 1, including but not limited to submittals, warranty, quality control, calculations, testing and inspections; meals and accommodations; and, tools, expendables and clean-up costs.”</p>
SC7.20	Payment Period	<p><u>Add</u> the following definition:</p>

		<p>“Payment Period</p> <p><i>Payment Period</i> has the definition given to it under GC 5.2.1.”</p>
SC7.21	Pre-Invoice Submission Meeting	<p><u>Add</u> the following definition:</p> <p>“Pre-Invoice Submission Meeting</p> <p><i>Pre-Invoice Submission Meeting</i> has the definition given to it under GC 5.2.1.”</p>
SC7.22	Proper Invoice	<p><u>Add</u> the following definition:</p> <p>“Proper Invoice</p> <p><i>Proper Invoice</i> means a “proper invoice” as that term is defined in Section 6.1 of the <i>Act</i>, including the minimum requirements set out in Appendix “1” of the Supplementary Conditions.”</p>
SC7.23	Proper Invoice Submission Date	<p><u>Add</u> the following definition:</p> <p>“Proper Invoice Submission Date</p> <p><i>Proper Invoice Submission Date</i> has the definition given to it under GC 5.2.2.1.”</p>
SC7.24	Request for Information (RFI)	<p><u>Add</u> the following definition:</p> <p>“Request for Information (RFI)</p> <p><i>Request for Information</i> or <i>RFI</i> means written documentation sent by the <i>Contractor</i> to the <i>Owner</i> or to the <i>Owner’s</i> representative or the <i>Consultant</i> requesting written clarification(s) and/or interpretation(s) of the <i>Drawings</i> and/or <i>Specifications</i>, <i>Contract</i> requirements and/or other pertinent information required to complete the <i>Work</i> of the <i>Contract</i> without applying for a change or changes to the <i>Work</i>.”</p>
SC7.25	Restricted Period	<p><u>Add</u> the following definition:</p> <p>“Restricted Period</p> <p><i>Restricted Period</i> means the (inclusive) period of time between December 1 to January 8 and August 15 to September 15 of any given year throughout the duration of the <i>Contract</i>.”</p>

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

Where a General Condition or paragraph of the General Conditions of the *Contract* is deleted by these amendments, the numbering of the remaining General Conditions or paragraphs shall remain unchanged, unless stated otherwise herein, and the numbering of the deleted item will be retained, unused.

PART 1 GENERAL PROVISIONS

SC8 GC 1.1 CONTRACT DOCUMENTS

SC8.1	1.1.3	<p><u>Delete</u> GC 1.1.3 in its entirety and <u>replace</u> it with the following:</p> <p>“1.1.3 The <i>Contractor</i> shall review the <i>Contract Documents</i> and shall report promptly to the <i>Consultant</i> any error, inconsistency, or omission the <i>Contractor</i> may discover. Such review by the <i>Contractor</i> shall be undertaken with the standard of care described in GC 3.13.1. Except for its obligation to make such review and report the result, the <i>Contractor</i> does not assume any responsibility to the <i>Owner</i> or to the <i>Consultant</i> for the accuracy of the <i>Contract Documents</i>. Provided it has exercised the degree of care and skill described in this GC 1.1.3, the <i>Contractor</i> shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the <i>Contract</i>”</p>
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		<i>Documents</i> , which the <i>Contractor</i> could not reasonably have discovered through the exercise of the required standard of care.”
SC8.2	1.1.4	<p><u>Delete</u> GC 1.1.4 in its entirety and <u>replace</u> it with the following:</p> <p>“1.1.4 Except for the obligation to complete the review prescribed in GC 1.1.3, and report the results as set out in this GC 1.1.4, the <i>Contractor</i> is not responsible for errors, omissions or inconsistencies in the <i>Contract Documents</i>. If there are errors, omissions or inconsistencies discovered by or made known to the <i>Contractor</i> as part of its review under GC 1.1.3 or at any time during the performance of the <i>Work</i>, the <i>Contractor</i> shall immediately notify the <i>Consultant</i>, and request instructions, a <i>Supplemental Instruction</i>, <i>Change Order</i>, or <i>Change Directive</i>, as the case may require, and shall not proceed with the <i>Work</i> affected until the <i>Contractor</i> has received corrected or additional information from the <i>Consultant</i>. The <i>Contractor</i> shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the <i>Contract Documents</i>, which the <i>Contractor</i> could not reasonably have discovered through the exercise of care and skill described in GC 3.13.”</p>
SC8.3	1.1.5.1	<p><u>Delete</u> GC 1.1.5.1 and <u>replace</u> with the following:</p> <p>“.1 the order of priority of documents, from highest to lowest, shall be:</p> <ul style="list-style-type: none"> .1 Supplementary Conditions; .2 the Agreement between the Owner and the Contractor; .3 the Definitions; .4 the General Conditions; .5 Division 01 of the <i>Specifications</i> .6 technical <i>Specifications</i>; .7 material and finishing schedules; and .8 the <i>Drawings</i>.
SC8.4	1.1.5.5	<p><u>Delete</u> GC 1.1.5.5 and <u>replace</u> with the following:</p> <p>“.5 Noted materials and annotations on the <i>Drawings</i> shall govern over the graphic representation of the <i>Drawings</i>.”</p>
SC8.5	1.1.5.6 to 1.1.5.8	<p><u>Add</u> the following new GC 1.1.5.6 to 1.1.5.8 as follows:</p> <p>“.6 Finishes in the room finish schedules shall govern over those shown on the <i>Drawings</i>.</p> <p>.7 Architectural drawings shall have precedence over structural, plumbing, mechanical, electrical and landscape drawings insofar as outlining, determining and interpreting conflicts over the required design intent of all architectural layouts and architectural elements of construction, it being understood that the integrity and installation of the systems designed by the <i>Consultant</i> or its sub-<i>Consultants</i> are to remain with each of the applicable drawing disciplines.</p> <p>.8 Should reference standards contained in the <i>Specifications</i> conflict with the <i>Specifications</i>, the <i>Specifications</i> shall govern. Should reference standards and <i>Specifications</i> conflict with each other or if certain requirements of the <i>Specifications</i> conflict with other requirements of the <i>Specifications</i>, the more stringent requirements shall govern.”</p>
SC8.6	1.1.9	<p><u>Add</u> the following to the end of GC 1.1.9:</p> <p>“The <i>Specifications</i> are divided into divisions and sections for convenience but shall be read as a whole and neither such division nor anything else contained in the <i>Contract Documents</i> will be construed to place responsibility on the <i>Owner</i> or the <i>Consultant</i> to settle disputes</p>

		among the <i>Subcontractors</i> and <i>Suppliers</i> with respect to such divisions. The <i>Drawings</i> are, in part, diagrammatic and are intended to convey the scope of the <i>Work</i> and indicate general and appropriate locations, arrangements and sizes of fixtures, equipment, outlets and other elements. The <i>Contractor</i> shall obtain more accurate information about the locations, arrangements and sizes from study and coordination of the <i>Drawings</i> , including <i>Shop Drawings</i> and shall become familiar with conditions and spaces affecting those matters before proceeding with the <i>Work</i> . Where site conditions require reasonable minor changes where the change requires only the additional labour two hours or less, the <i>Contractor</i> shall make such changes at no additional cost to the <i>Owner</i> . Similarly, where known conditions or existing conditions interfere with new installation and require relocation, the <i>Contractor</i> shall include such relocation in the <i>Work</i> . The <i>Contractor</i> shall arrange and install fixtures and equipment in such a way as to conserve as much headroom and space as possible. The schedules are those portions of the <i>Contract Documents</i> , wherever located and whenever issued, which compile information of similar content and may consist of drawings, tables and/or lists."
SC8.7	1.1.12	<p><u>Add</u> new paragraphs 1.1.12 and 1.1.13 as follows:</p> <p>"1.1.12 The <i>Consultant</i>, on behalf of the <i>Owner</i> shall provide the <i>Contractor</i> without charge, twelve (12) copies of the <i>Contract Documents</i>, exclusive of those required by jurisdictional authorities and the executed <i>Contract Documents</i>. Additional copies can be purchased by the <i>Contractor</i> at the <i>Consultant's</i> cost of reproduction, handling and sales tax.</p> <p>1.1.13 The <i>Contractor</i> shall keep one copy of the current <i>Contract Documents</i>, <i>Supplemental Instructions</i>, contemplated <i>Change Orders</i>, <i>Change Orders</i>, <i>Change Directives</i>, cash allowance disbursement authorizations, reviewed <i>Shop Drawings</i>, submittals, reports and records of meeting at the <i>Place of the Work</i>, in good order and available to the <i>Owner</i> and <i>Consultant</i>."</p>

SC9 GC 1.3 RIGHTS AND REMEDIES

SC9.1	1.3.2	<p>In paragraph 1.3.2 <u>delete</u> the word "No" from the beginning of the paragraph and <u>replace</u> it with the words:</p> <p>"Except with respect to the requirements set out in paragraphs 6.4.1, 6.5.4, 6.6.1 and 8.3.2, no..."</p>
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SC10 *NEW* GC 1.5 EXAMINATION OF DOCUMENTS AND SITE

SC10.1	1.5	<p><u>Add</u> new GC 1.5 – EXAMINATION OF DOCUMENTS AND SITE as follows:</p> <p>"GC 1.5 EXAMINATION OF DOCUMENTS AND SITE</p> <p>1.5.1 The <i>Contractor</i> declares and represents that in tendering for the <i>Work</i>, and in entering into a Contract with the <i>Owner</i> for the performance of the <i>Work</i>, it has investigated for itself the character of the <i>Work</i> to be done, based on information generally available from a visit to the <i>Place of the Work</i> and to the standard set out under GC 3.14.1 and further represents and warrants and acknowledges that it considered and took into account in the <i>Contract Price</i> all reasonably known impacts and restrictions arising from the COVID-19 pandemic, including without limitation corresponding legislative changes that may impact performance of the <i>Project</i>, various weather conditions that may affect the <i>Work</i>, the availability of supplies and labour or other conditions or risks that the <i>Contractor</i> knew about or reasonably ought to have known about prior to the date of the <i>Contract</i>. The <i>Contractor</i> has assumed and does hereby assume all risk of known conditions now existing or arising in the course of the <i>Work</i> which might or could make the <i>Work</i>, or any items</p>
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		<p>thereof more expensive in character, or more onerous to fulfil, than was contemplated or known when the tender was made or the <i>Contract</i> signed.</p> <p>1.5.2 The <i>Contractor</i> also declares that prior to commencement of the <i>Work</i>, where in tendering for the <i>Work</i> and in entering into this <i>Contract</i>, the <i>Contractor</i> relied upon information furnished by the <i>Owner</i> or any of its agents or servants respecting the nature or confirmation of the ground at the site of the <i>Work</i>, the <i>Contractor</i> shall review to the standard specified in GC 3.14.1, the accuracy of the information furnished by the <i>Owner</i>. If a condition is materially different than what is stated in the information furnished by the <i>Owner</i>, the <i>Contractor</i> shall, no later than five (5) <i>Working Days</i> after the first observation of such condition(s), deliver to the <i>Owner</i> and to the <i>Consultant</i> a <i>Notice in Writing</i> specifying the materially different condition and the <i>Contractor</i> shall not proceed with the affected part of the <i>Work</i> until receiving written direction from the <i>Owner</i> or the <i>Consultant</i>. Where the <i>Contractor</i> fails to provide prompt <i>Notice in Writing</i> in accordance with this GC 1.5.2, the <i>Contractor</i> expressly waives and releases the <i>Owner</i> from all claims with respect to the said information with respect to the <i>Work</i>.</p>
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PART 2 ADMINISTRATION OF THE CONTRACT

SC11 GC 2.2 ROLE OF THE CONSULTANT

SC11.13	2.2.5	<p><u>Delete</u> paragraph 2.2.4 and <u>replace</u> it with the following:</p> <p>"2.2.4 Upon receipt of an application for payment that satisfies the requirement of a <i>Proper Invoice</i>, based on the <i>Consultant's</i> observations and evaluation of the <i>Contractor's</i> application for payment, the <i>Consultant</i> will determine the amounts owing to the <i>Contractor</i> under the <i>Contract</i> and will issue certificates for payment as provided in Article A-5 - PAYMENT, GC 5.3 - PAYMENT, GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK, and GC 5.5 - FINAL PAYMENT. If the <i>Consultant</i> determines that the amount payable to the <i>Contractor</i> differs from the amount stated in a <i>Proper Invoice</i>, the <i>Consultant</i> shall notify the <i>Owner</i> as provided in GC 5.3.1.2 and prepare a draft of the applicable <i>Notice of Non-Payment</i> for the amount in dispute."</p>
SC11.14	2.2.6	<p>In the first sentence of paragraph 2.2.6, <u>delete</u> the words "Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER".</p>
SC11.15	2.2.12	<p>At paragraph 2.2.12, <u>insert</u> the following at end of that paragraph:</p> <p>"If, in the opinion of the <i>Contractor</i>, the <i>Supplemental Instruction</i> involves an adjustment in the <i>Contract Price</i> or in the <i>Contract Time</i>, it shall, within ten (10) <i>Working Days</i> of receipt of a <i>Supplemental Instruction</i>, provide the <i>Consultant</i> with a notice in writing to that effect. Failure to provide written notification within the time stipulated in this paragraph 2.2.12 shall be deemed an acceptance of the <i>Supplemental Instruction</i> by the <i>Contractor</i>, without any adjustment in the <i>Contract Price</i> or <i>Contract Time</i>."</p>

SC12 GC 2.3 REVIEW AND INSPECTION OF THE WORK

SC12.1	2.3.2	<p><u>Amend</u> paragraph 2.3.2 by <u>adding</u> the words "and <i>Owner</i>" after the words "<i>Consultant</i>" in the second and third lines.</p>
SC12.2	2.3.3	<p><u>Delete</u> paragraph 2.3.3 in its entirety and <u>replace</u> it with the following:</p> <p>"2.3.3 The <i>Contractor</i> shall furnish promptly two copies to the <i>Consultant</i> and one copy to the <i>Owner</i> of all certificates and inspection reports relating to the <i>Work</i>."</p>

SC12.3	2.3.4	In paragraph 2.3.4 <u>add</u> the word “review” after the word “inspections” in the first and second lines of paragraph 2.3.4.
SC12.4	2.3.5	In paragraph 2.3.5 in the first line after the word “ <i>Consultant</i> ”, <u>add</u> “or the <i>Owner</i> ”.
SC12.5	2.3.8	<u>Add</u> a new paragraph 2.3.8 as follows: “2.3.8 The <i>Consultant</i> will conduct periodic reviews of the <i>Work</i> in progress, to determine general conformance with the requirements of the <i>Contract Documents</i> . Such reviews, or lack thereof, shall not give rise to any claims by the <i>Contractor</i> in connection with construction means, methods, techniques, sequences and procedures, nor in connection with construction safety at the <i>Place of Work</i> , responsibility for which belongs exclusively to the <i>Contractor</i> .”

SC13 GC 2.4 DEFECTIVE WORK

SC13.1	2.4.1	<u>Amend</u> GC 2.4.1 by inserting “, the <i>Owner</i> and/or its agent” in the first sentence following “rejected by the <i>Consultant</i> ”.
SC13.2	2.4.1.1 to 2.4.1.2	<u>Add</u> new paragraphs 2.4.1.1 and 2.4.1.2 as follows: “2.4.1.1 The <i>Contractor</i> shall rectify, in a manner acceptable to the <i>Consultant</i> and to the <i>Owner through the Consultant</i> all defective work and deficiencies throughout the <i>Work</i> , whether or not they are specifically identified by the <i>Consultant</i> . 2.4.1.2 The <i>Contractor</i> shall prioritize the correction of any defective work, which, in the sole discretion of the <i>Owner through the Consultant</i> , adversely affects the day to day operations of the <i>Owner</i> or which, in the sole discretion of the <i>Consultant</i> , adversely affects the progress of the <i>Work</i> .”
SC13.3	2.4.2	<u>Delete</u> paragraph 2.4.2 in its entirety and <u>replace</u> it with the following: “2.4.2 The <i>Contractor</i> shall promptly pay the <i>Owner</i> for costs incurred by the <i>Owner</i> , the <i>Owner’s</i> own forces or the <i>Owner’s</i> other contractors, for work destroyed or damaged or any alterations necessitated by the <i>Contractor’s</i> removal, replacement or re-execution of defective work.”
SC13.4	2.4.4	<u>Add</u> new paragraph 2.4.4 as follows: “2.4.4 Neither acceptance of the <i>Work</i> by the <i>Consultant</i> or the <i>Owner</i> , nor any failure by the <i>Consultant</i> or the <i>Owner</i> to identify, observe or warn of defective <i>Work</i> or any deficiency in the <i>Work</i> shall relieve the <i>Contractor</i> from the sole responsibility for rectifying such defect or deficiency at the <i>Contractor’s</i> sole cost, even where such failure to identify, observe or warn is negligent.”

PART 3 EXECUTION OF THE WORK

SC14 GC 3.1 CONTROL OF THE WORK

SC14.1	3.1.2	Amend paragraph 3.1.2 by <u>inserting</u> the words “Construction Schedule” after the word “sequences”.
SC14.2	3.1.3 & 3.1.4	<u>Add</u> new paragraphs 3.1.3 and 3.1.4 as follows: “3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the <i>Contractor</i> shall verify at the <i>Place of the Work</i> , all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the <i>Work</i> and shall further carefully compare such field measurements and conditions

		<p>with the requirements of the <i>Contract Documents</i>. Where dimensions are not included or exact locations are not apparent, the <i>Contractor</i> shall immediately notify the <i>Consultant</i> in writing and obtain written instructions from the <i>Consultant</i> before proceedings with any part of the affected <i>Work</i>.</p> <p>3.1.4 Notwithstanding the provisions of paragraphs 3.1.1 and 3.1.2, the <i>Owner</i> shall have access to the site at all times to monitor all aspects of construction. Such access shall in no circumstances affect the obligations of the <i>Contractor</i> to fulfill its contractual obligations."</p>
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SC15 GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

SC15.1	3.2.2.1	<u>Delete</u> subparagraph 3.2.2.1 and <u>replace</u> it with "[Intentionally left blank]".
SC15.2	3.2.3.2	<p><u>Delete</u> subparagraph 3.2.3.2 and <u>replace</u> it with the following:</p> <p>"2 co-ordinate and schedule the activities and work of other contractors and the <i>Owner's</i> own forces, including where other contractors or the <i>Owner's</i> own forces are used after the <i>Owner</i> and the <i>Contractor</i> cannot reach agreement on the value of a change, with the <i>Work</i> of the <i>Contractor</i> and connect as specified or shown in the <i>Contract Documents</i>."</p>
SC15.3	3.2.3.4	<u>Delete</u> the period at the end of subparagraph 3.2.3.4 and <u>replace</u> it with a semi-colon.
SC15.4	3.2.3.5	<p><u>Add</u> new subparagraph 3.2.3.5 as follows:</p> <p>".5 Subject to GC 9.4 CONSTRUCTION SAFETY, for the <i>Owner's</i> own forces and for other contractors, assume overall responsibility for compliance with all aspects of the applicable health and safety legislation in force at the <i>Place of the Work</i>, including all of the responsibilities of the "constructor", pursuant to the <i>OHSA</i>."</p>

SC16 GC 3.3 TEMPORARY WORK

SC16.1	3.3.2	In paragraph 3.3.2, in the second line after the words "where required by law", insert "or by the <i>Consultant</i> ".
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SC17 GC 3.4 CONSTRUCTION SCHEDULE

SC17.1	3.4.1	<p><u>Delete</u> GC 3.4.1 in its entirety and <u>replace</u> it with the following:</p> <p>"3.4.1 The <i>Contractor</i> shall:</p> <p>1 within five (5) calendar days of receiving written confirmation of the award of the <i>Contract</i>, prepare and submit to the <i>Owner</i> and the <i>Consultant</i> for their review and approval, a construction schedule in the format indicated below that indicates the timing of the activities of the <i>Work</i> and provides sufficient detail of the critical events and their inter-relationship to demonstrate the <i>Work</i> will be performed in conformity with the <i>Contract Time</i> and in accordance with the <i>Contract Documents</i>. Such schedule is to include a delivery schedule for <i>Products</i> whose delivery is critical to the schedule for the <i>Work</i> or are required by the <i>Contract</i> to be included in a <i>Products</i> delivery schedule. The <i>Contractor</i> shall employ construction scheduling software, being the latest version of "Microsoft Project", that permits the progress of the <i>Work</i> to be monitored in relation to the critical path established in the schedule. The <i>Contractor</i> shall provide such schedule and any successor or revised schedules in both original digital file format (e.g., .mpp format for Microsoft Project), portable data file (PDF) format, and hard copy. Once accepted by the <i>Owner</i> and the <i>Consultant</i>,</p>
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		<p>the construction schedule submitted by the <i>Contractor</i> shall become the baseline “Construction Schedule”;</p> <p>.2 provide the expertise and resources, such resources including manpower and equipment, as are necessary on a best efforts basis to maintain progress under the accepted baseline <i>Construction Schedule</i> or revised construction schedule accepted by the <i>Owner</i> pursuant to GC 3.4 CONSTRUCTION SCHEDULE, which includes without limitation, the <i>Contractor</i>’s use of all possible and, if necessary, extraordinary measures, to bring the progress of the <i>Work</i> into compliance with the <i>Construction Schedule</i>, such as (i) increasing the presence of its own forces at the <i>Place of the Work</i>; (ii) directing any <i>Subcontractors</i> or <i>Suppliers</i> to increase their labour forces and equipment; (iii) working overtime and extra shifts; and (iv) providing any additional supervision and coordination of the <i>Project</i>, all at the <i>Contractor</i>’s own cost and expense save and except where GC 6.5.1, 6.5.2, or 6.5.3 apply; and,</p> <p>.3 monitor the progress of the <i>Work</i> on a weekly basis relative to the baseline <i>Construction Schedule</i>, or any revised <i>Construction Schedule</i> accepted by the <i>Owner</i> pursuant to GC 3.4 CONSTRUCTION SCHEDULE, deliver a <i>Construction Schedule Update</i> to the <i>Consultant</i> and <i>Owner</i> with each application for payment, at a minimum, or as may be reasonably required by the <i>Consultant</i> and advise the <i>Consultant</i> and the <i>Owner</i> weekly in writing of any variation from the baseline or slippage in the schedule; and,</p> <p>.4 if after applying the expertise and resources required under paragraph 3.4.1.2, the <i>Contractor</i> forms the opinion that the slippage in schedule reported in paragraph 3.4.1.3 cannot be recovered by the <i>Contractor</i>, it shall, in the same notice provided under paragraph 3.4.1.3, indicate to the <i>Consultant</i> if the <i>Contractor</i> intends to apply for an extension of <i>Contract Time</i> as provided in PART 6 —CHANGES IN THE WORK; and,</p> <p>.5 ensure that the <i>Contract Price</i> shall include all costs required to phase or stage the <i>Work</i>.”</p>
SC17.2	3.4.2	<p><u>Add</u> new GC 3.4.2 and GC 3.4.3 as follows:</p> <p>“3.4.2 If, at any time, it should appear to the <i>Owner</i> or the <i>Consultant</i> that the actual progress of the <i>Work</i> is behind schedule or is likely to become behind schedule, or if the <i>Contractor</i> has given notice of such to the <i>Owner</i> or the <i>Consultant</i> pursuant to GC 3.4.1.3, the <i>Contractor</i> shall, either at the request of the <i>Owner</i> or the <i>Consultant</i>, or following giving notice pursuant to GC 3.4.1.3, take appropriate steps to cause the actual progress of the <i>Work</i> to conform to the schedule or minimize the resulting delay. Within 5 calendar days of the request by the <i>Owner</i> or the <i>Consultant</i> or the notice being given pursuant to GC 3.4.1.3, the <i>Contractor</i> shall produce and present to the <i>Owner</i> and the <i>Consultant</i> a plan demonstrating how the <i>Contractor</i> will recover the performance of the <i>Work</i> to align with the currently approved <i>Construction Schedule</i>.</p> <p>3.4.3 The <i>Contractor</i> shall not amend the <i>Construction Schedule</i> without the prior written consent of the <i>Owner</i>.. Any revisions to the <i>Construction Schedule</i> approved by the <i>Owner</i> shall not be deemed to be an extension of the <i>Contract Time</i>. All requests by the <i>Contractor</i> for a revision to the <i>Construction Schedule</i> that include an extension to the <i>Contract Time</i> must be approved by the <i>Owner</i> through an executed <i>Change Order</i>.”</p>

SC18 GC 3.5 SUPERVISION

SC18.1	3.5.1	<p><u>Delete</u> GC 3.5.1 and <u>replace</u> it with the following:</p> <p>“3.5.1 The <i>Contractor</i> shall employ a competent full-time superintendent, acceptable to the <i>Owner</i> and <i>Consultant</i>, who shall be in full time attendance at the <i>Place of the Work</i> while the <i>Work</i> is being performed. The superintendent shall not be changed by the <i>Contractor</i> without valid reason which shall be provided in writing and shall not be</p>
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		<p>changed without prior consultation with and agreement by the Owner and the <i>Consultant</i>. The <i>Contractor</i> shall replace the superintendent within 7 <i>Working Days</i> of the Owner's written notification, if the superintendent's performance is not acceptable to the Owner. The <i>Contractor</i> shall provide the Owner and the <i>Consultant</i> with the names, addresses and telephone numbers of the superintendent referred to in this GC 3.5.1 and other responsible persons who may be contacted for emergency and other reasons during non-working hours. ."</p>
SC18.2	3.5.2	<p><u>Delete</u> GC 3.5.2 and <u>replace</u> it with the following:</p> <p>"3.5.2 The superintendent, and any project manager appointed by the <i>Contractor</i>, shall represent the <i>Contractor</i> at the <i>Place of the Work</i> and shall have full authority to act on written instructions given by the <i>Consultant</i> and/or the Owner. Instructions given to the superintendent or the project manager shall be deemed to have been given to the <i>Contractor</i> and both the superintendent and any project manager shall have full authority to act on behalf of the <i>Contractor</i> and bind the <i>Contractor</i> in matters related to the <i>Contract</i>."</p>
SC18.3	3.5.3 to 3.5.6	<p><u>Add</u> new GC 3.5.3, 3.5.4, 3.5.5 and 3.5.6 as follows:</p> <p>"3.5.3 The Owner may, at any time during the course of the <i>Work</i>, request the replacement of the appointed representative(s). Immediately upon receipt of the request, the <i>Contractor</i> shall make arrangements to appoint an acceptable replacement, which is approved by the Owner.</p> <p>3.5.4 The supervisory staff assigned to the <i>Project</i> shall also be fully competent to implement efficiently all requirements for scheduling, coordination, field engineering, reviews, inspections and submittals defined in the <i>Specifications</i>, and have a minimum 5 years documented "Superintendent/Project Management" experience.</p> <p>3.5.5 The <i>Consultant and Owner</i> shall reserve the right to review the record of experience and credentials of supervisory staff assigned to the <i>Project</i> prior to commencement of the <i>Work</i>.</p> <p>3.5.6 A superintendent assigned to the <i>Work</i> shall be "Gold Seal Certified" as per the Canadian Construction Association; or a superintendent that can demonstrate the requisite experience and success related to the <i>Project</i> to the sole satisfaction of the Owner."</p>

SC19 GC 3.6 SUBCONTRACTORS AND SUPPLIERS

SC19.1	3.6.1.1	<p>In paragraph 3.6.1.1 <u>add</u> to the end of the second line the words "including any warranties and service agreements which extend beyond the term of the <i>Contract</i>."</p>
SC19.2	3.6.1.2	<p>In subparagraph 3.6.1.2 after the words "the <i>Contract Documents</i>" <u>add</u> the words "including any required surety bonding".</p>
SC19.3	3.6.2	<p><u>Delete</u> paragraph 3.6.2. in its entirety and <u>replace</u> it with the following:</p> <p>"3.6.2 The substitution of any <i>Subcontractor</i> and/or <i>Suppliers</i> after submission of the <i>Contractor's</i> bid will not be accepted unless a valid reason is given in writing to and approved by the Owner, whose approval may be arbitrarily withheld. The reason for substitution must be provided to the Owner and to the original <i>Subcontractor</i> and/or <i>Supplier</i> and the <i>Subcontractor</i> and/or <i>Supplier</i> shall be given the opportunity to reply to the <i>Contractor</i> and Owner. The <i>Contractor</i> shall be fully aware of the capability of each <i>Subcontractor</i> and/or <i>Supplier</i> included in its bid, including but not limited to technical ability, financial stability and ability to maintain the proposed construction schedule."</p>

SC19.4	3.6.7, 3.6.8, 3.6.9 & 3.6.10	<p><u>Add</u> new paragraphs 3.6.7, 3.6.8, 3.6.9, and 3.6.10 as follows:</p> <p>“3.6.7 The <i>Contractor</i> represents and warrants that it has confirmed the availability of its <i>Subcontractors</i> for the <i>Project</i> and, in particular, for the performance of their respective portions of the <i>Work</i> to ensure completion of the <i>Project</i> within the <i>Contract Price</i> and the <i>Contract Time</i>.</p> <p>3.6.8 The <i>Consultant</i> or the <i>Owner</i>, acting reasonably, may from time to time require the <i>Contractor</i> to remove from the <i>Project</i> any personnel of the <i>Contractor</i>, including project managers, superintendents or <i>Subcontractors</i>. Such persons shall be replaced by the <i>Contractor</i> in a timely fashion to the satisfaction of the <i>Consultant</i> or the <i>Owner</i>, as the case may be, at no cost to the <i>Owner</i>.</p> <p>3.6.9 Where provided in the <i>Contract</i>, the <i>Owner</i> may assign to the <i>Contractor</i>, and the <i>Contractor</i> agrees to accept, any contract procured by the <i>Owner</i> for <i>Work</i> or services required on the <i>Project</i> that has been pre-tendered or pre-negotiated by the <i>Owner</i>, and upon such assignment, the <i>Owner</i> shall have no further liability to any party for such contract.</p> <p>3.6.10 The <i>Contractor</i> covenants that each subcontract or supply contract which the <i>Contractor</i> enters into for the purpose of performing the <i>Work</i> shall expressly provide for the assignment thereof to the <i>Owner</i> (at the option of the <i>Owner</i>) and the assumption by the <i>Owner</i> of the obligations of the <i>Contractor</i> thereunder, upon the termination of the <i>Contract</i> and upon written notice by the <i>Owner</i> to the other parties to such subcontracts or supply contracts, without the imposition of further terms or conditions; provided, however, that until the <i>Owner</i> has given such notice, nothing herein contained shall be deemed to create any contractual or other liability upon the <i>Owner</i> for the performance of obligations under such subcontracts or supply contracts and the <i>Contractor</i> shall be fully responsible for all of its obligations and liabilities (if any) under such subcontracts and supply contracts.”</p>
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SC20 GC 3.7 LABOUR AND PRODUCTS

SC20.1	3.7.1	<u>Amend</u> paragraph 3.7.1 by <u>adding</u> the words, “..., agents, <i>Subcontractors</i> and <i>Suppliers</i> ...” after the word “employees” in the first line.
SC20.2	3.7.2	<p><u>Delete</u> paragraph 3.7.2 and <u>substitute</u> with the following:</p> <p>“3.7.2 <i>Products</i> provided shall be new and shall conform to all current applicable specifications of the Canadian Standards Association, Canadian Standards Board or General Standards Board, ASTM, National Building Code, provincial and municipal building codes, fire safety standards, and all governmental authorities and regulatory agencies having jurisdiction at the <i>Place of the Work</i>, unless otherwise specified. <i>Products</i> which are not specified shall be of a quality consistent with those specified and their use acceptable to the <i>Consultant</i>. <i>Products</i> brought on to the <i>Place of the Work</i> by the <i>Contractor</i> shall be deemed to be the property of the <i>Owner</i>, but the <i>Owner</i> shall be under no liability for loss thereof or damage thereto arising from any cause whatsoever. The said <i>Products</i> shall be at the sole risk of the <i>Contractor</i>. Workmanship shall be, in every respect, first class and the <i>Work</i> shall be performed in accordance with the best modern industry practice.”</p>
SC20.3	3.7.4 to 3.7.8	<p><u>Add</u> new paragraphs 3.7.4, 3.7.5, 3.7.6, 3.7.7, and 3.7.8 as follows:</p> <p>“3.7.4 Upon receipt of a <i>Notice in Writing</i> from the <i>Owner</i>, the <i>Contractor</i> shall immediately remove from the <i>Place of the Work</i>, tradesmen and labourers or anyone whose conduct jeopardizes the safety of the <i>Owner</i>’s operations or who are considered by the <i>Owner</i> or the <i>Consultant</i> to be unskilled or otherwise objectionable. Immediately upon receipt of the request, the <i>Contractor</i> shall make arrangements to appoint an acceptable replacement.</p>

		<p>3.7.5 The <i>Contractor</i> shall cooperate with the <i>Owner</i> and its representatives and shall take all reasonable and necessary actions to maintain stable and harmonious labour relations with respect to the <i>Work</i> at the <i>Place of the Work</i>, including cooperation to attempt to avoid <i>Work</i> stoppages, trade union jurisdictional disputes and other <i>Labour Disputes</i>. Any costs arising from labour disputes shall be at the sole expense of the <i>Contractor</i>.</p> <p>3.7.6 The cost for overtime required beyond the normal <i>Working Day</i> to complete individual construction operations of a continuous nature, such as pouring or finishing of concrete or similar work, or <i>Work</i> that the <i>Contractor</i> elects to perform at overtime rates without the <i>Owner</i> requesting it, shall not be chargeable to the <i>Owner</i>.</p> <p>3.7.7 All manufactured <i>Products</i> which are identified by their proprietary names or by part or catalogue number in the <i>Specifications</i> shall be used by the <i>Contractor</i>. No substitutes for such specified <i>Products</i> shall be used without the written approval of the <i>Owner</i> and the <i>Consultant</i>. Substitutes will only be considered by the <i>Consultant</i> when submitted in sufficient time to permit proper review and investigation. When requesting approval for the use of substitutes, the <i>Contractor</i> shall include in its submission any proposed change in the <i>Contract Price</i>. The <i>Contractor</i> shall use all proprietary <i>Products</i> in strict accordance with the manufacturer's directions. Where there is a choice of proprietary <i>Products</i> specified for one use, the <i>Contractor</i> may select any one of the <i>Products</i> so specified for this use.</p> <p>3.7.8 Materials, appliances, equipment and other <i>Products</i> are sometimes specified by reference to brand names, proprietary names, trademarks or symbols. In such cases, the name of a manufacturer, distributor, <i>Supplier</i> or dealer is sometimes given to assist the <i>Contractor</i> to find a source <i>Supplier</i>. This shall not relieve the <i>Contractor</i> from its responsibility from finding its own source of supply even if the source names no longer supplies the <i>Product</i> specified. If the <i>Contractor</i> is unable to obtain the specified <i>Product</i>, the <i>Contractor</i> shall supply a substitute product equal to or better than the specified <i>Product</i>, as approved by the <i>Consultant</i> with no extra compensation. Should the <i>Contractor</i> be unable to obtain a substitute <i>Product</i> equal to or superior to the specified <i>Product</i> and the <i>Owner</i> accepts a different <i>Product</i>, the <i>Contract Price</i> shall be adjusted accordingly, as approved by the <i>Consultant</i>."</p>
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SC21 GC 3.8 SHOP DRAWINGS

SC21.1	3.8.1	<p><u>Delete</u> paragraph 3.8.1 in its entirety and <u>replace</u> with the following:</p> <p>"3.8.1 The <i>Contractor</i> shall provide shop drawings as described in the <i>Contract Documents</i> and as the <i>Consultant</i> may reasonably request."</p>
SC21.2	3.8.3	<p><u>Delete</u> paragraph 3.8.3 and <u>replace</u> it with the following:</p> <p>"3.8.3 The <i>Contractor</i> shall prepare a <i>Shop Drawings</i> schedule acceptable to the <i>Owner</i> and the <i>Consultant</i> prior to the first application for payment. A draft of the proposed <i>Shop Drawings</i> schedule shall be submitted by the <i>Contractor</i> to the <i>Consultant</i> and the <i>Owner</i> for approval. The draft <i>Shop Drawings</i> schedule shall clearly indicate the phasing of <i>Shop Drawings</i> submissions. The <i>Contractor</i> shall periodically re-submit the <i>Shop Drawings</i> schedule to correspond to changes in the <i>Construction Schedule</i>."</p>
SC21.3	3.8.5	<p><u>Delete</u> paragraph 3.8.5 in its entirety and <u>substitute</u> the following:</p> <p>"3.8.5 At the time of providing <i>Shop Drawings</i>, the <i>Contractor</i> shall advise the <i>Consultant</i> in writing of any deviations in <i>Shop Drawings</i> from the requirements of the <i>Contract Documents</i>. The <i>Consultant</i> shall indicate the acceptance of such deviation expressly in writing. Where manufacturers' literature is submitted in lieu of scaled</p>

		drawings, it shall be clearly marked in ink, to indicate the specific items for which review is requested.”
SC21.4	3.8.8 to 3.8.12	<p><u>Add</u> new paragraphs 3.8.8, 3.8.9, 3.8.10, 3.8.11, and 3.8.12 as follows:</p> <p>“3.8.8 Reviewed <i>Shop Drawings</i> shall not authorize a change in the <i>Contract Price</i> and/or the <i>Contract Time</i>.</p> <p>3.8.9 Except where the parties have agreed to a different <i>Shop Drawings</i> schedule pursuant to paragraph 3.10.3, the <i>Contractor</i> shall comply with the requirements for <i>Shop Drawings</i> submissions stated in the <i>Specifications</i>.</p> <p>3.8.10 The <i>Contractor</i> shall not use the term “by others” on <i>Shop Drawings</i> or other submittals. The related trade, <i>Subcontractor</i> or <i>Supplier</i> shall be stated.</p> <p>3.8.11 Certain <i>Specifications</i> sections require the <i>Shop Drawings</i> to bear the seal and signature of a professional engineer. Such professional engineer must be registered in the jurisdiction of the <i>Place of the Work</i> and shall have expertise in the area of practice reflected in the <i>Shop Drawings</i>.</p> <p>3.8.12 The <i>Consultant</i> will review and return <i>Shop Drawings</i> and submittals in accordance with the schedule agreed upon in paragraph 3.10.3, The <i>Contractor</i> shall allow the <i>Consultant</i> a minimum of 10 <i>Working Days</i> to review <i>Shop Drawings</i> from the date of receipt. If resubmission of <i>Shop Drawings</i> is required, a further 10 <i>Working Day</i> period is required for the <i>Consultant’s</i> review.”</p>

SC22 *NEW* GC 3.9 USE OF THE WORK

SC22.1	GC 3.9	<p><u>Add</u> new GC 3.9 – USE OF THE WORK as follows:</p> <p>“GC 3.9 USE OF THE WORK</p> <p>3.9.1 The <i>Contractor</i> shall confine <i>Construction Equipment</i>, <i>Temporary Work</i>, storage of <i>Products</i>, waste products and debris, and operations of employees and <i>Subcontractors</i> to limits indicated by laws, ordinances, permits, by the direction of the <i>Owner</i> or the <i>Consultant</i>, or the <i>Contract Documents</i> and shall not unreasonably encumber the <i>Place of the Work</i>.</p> <p>3.9.2 The <i>Contractor</i> shall not load or permit to be loaded any part of the <i>Work</i> with a weight or force that will endanger the safety of the <i>Work</i>.</p> <p>3.9.3 The <i>Owner</i> shall have the right to enter or occupy the <i>Place of the Work</i> in whole or in part for the purpose of placing fittings and equipment, or for other use before <i>Substantial Performance of the Work</i>, if, in the opinion of the <i>Consultant</i>, such entry and occupation does not prevent or substantially interfere with the <i>Contractor</i> in the performance of the <i>Contract</i> within the <i>Contract Time</i>. Such entry or occupation shall neither be considered as acceptance of the <i>Work</i> or in any way relieves the <i>Contractor</i> from its responsibility to complete the <i>Contract</i>.”</p>
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SC23 *NEW* GC 3.10 CUTTING AND REMEDIAL WORK

SC23.1	GC 3.10	<p><u>Add</u> new GC 3.10 – CUTTING AND REMEDIAL WORK as follows:</p> <p>“GC 3.10 CUTTING AND REMEDIAL WORK</p> <p>3.10.1 The <i>Contractor</i> shall perform the cutting and remedial work required to make the affected parts of the <i>Work</i> come together properly. Such cutting and remedial work</p>
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		<p>shall be performed by specialists familiar with the <i>Products</i> affected and shall be performed in a manner to neither damage nor endanger the <i>Work</i>.</p> <p>3.10.2 The <i>Contractor</i> shall coordinate the <i>Work</i> to ensure all cutting and remedial work required is kept to a minimum.</p> <p>3.10.3 Unless specifically stated otherwise in the <i>Specifications</i>, the <i>Contractor</i> shall do all cutting and making good necessary for the proper installation and performance of the <i>Work</i>.</p> <p>3.10.4 To avoid unnecessary cutting, the <i>Contractor</i> shall lay out its work and advise the <i>Subcontractors</i>, when necessary, where to leave holes for installation of pipes and other work."</p>
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SC24 *NEW* GC 3.11 CLEAN UP

SC24.13	<p>3.11.1, 3.11.2, 3.11.3, 3.11.4, 3.11.5 & 3.11.6</p>	<p>Add new paragraphs 3.11.1, 3.11.2, 3.11.3, 3.11.4, 3.11.5, and 3.11.6 as follows:</p> <p>"3.11.1 The <i>Contractor</i> shall maintain the <i>Work</i> in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the <i>Owner</i>, other contractors or their employees. The <i>Contractor</i> shall remove accumulated waste and debris at least once a week as a minimum or as required by the nature of the <i>Work</i>.</p> <p>3.11.2 Before applying for <i>Substantial Performance of the Work</i>, the <i>Contractor</i> shall remove waste products and debris, other than that resulting from the work of the <i>Owner</i>, other contractors or their employees, and shall leave the <i>Place of the Work</i> clean and suitable for use or occupancy by the <i>Owner</i>. The <i>Contractor</i> shall remove products, tools, materials, <i>Construction Equipment</i>, and <i>Temporary Work</i> not required for the performance of the remaining work.</p> <p>3.11.3 As a condition precedent to submitting its application for final payment, the <i>Contractor</i> shall remove any remaining products, tools, materials, <i>Construction Equipment</i>, <i>Temporary Work</i>, and waste products and debris, other than those resulting from the work of the <i>Owner</i>, other contractors or their employees.</p> <p>3.11.4 The <i>Contractor</i> shall clean up garbage during and after construction and maintain the <i>Place of the Work</i> in a neat and orderly condition on a daily basis. Prior to leaving the <i>Place of the Work</i> and following completion of the <i>Work</i>, the <i>Contractor</i> shall make good all damage to the building and its components caused by the performance of the <i>Work</i> or by any <i>Subcontractor</i> or <i>Supplier</i>. The <i>Contractor</i> shall leave the <i>Place of the Work</i> in a clean and finished state; remove all <i>Construction Equipment</i> and materials; remove all paint, stains, labels, dirt, etc. from the <i>Place of the Work</i>; and touch up all damaged painted areas (if applicable). The <i>Contractor</i> shall be responsible for restoring those areas of the <i>Place of the Work</i>, impacted by the <i>Work</i>, to their original condition."</p> <p>3.11.5 Without limitation to or waiver of the <i>Owner's</i> other rights and remedies, the <i>Owner</i> shall have the right to back charge to the <i>Contractor</i> the cost of damage to the site caused by transportation in and out of the <i>Place of the Work</i> by the <i>Contractor</i>, <i>Subcontractors</i> or <i>Suppliers</i>, if not repaired before final payment.</p> <p>3.11.6 The <i>Contractor</i> shall dispose of debris at a location and in a manner acceptable to the <i>Owner</i> (and to the authorities having jurisdiction at the <i>Place of the Work</i> and at the disposal area) and the <i>Contractor</i> shall cover containers with tarpaulins."</p>
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SC25 *NEW* GC 3.12 EXCESS SOIL MANAGEMENT

SC25.1	GC 3.12	<p><u>Add</u> new GC 3.12 – EXCESS SOIL MANAGEMENT as follows:</p> <p>"GC 3.12 EXCESS SOIL MANAGEMENT</p> <p>3.12.1 The <i>Contractor</i> shall be solely responsible for the proper management of all <i>Excess Soil</i> at the <i>Place of the Work</i> and for performance of the <i>Work</i> in compliance with the rules, regulations and practices required by the <i>Excess Soil Regulation</i> until such time as <i>Ready-for-Takeover</i> is achieved. Without restricting the generality of the previous sentence, the <i>Contractor's</i> responsibility under this GC 3.12 includes the designation, transportation, tracking, temporary and/or final placement, record keeping, and reporting of all <i>Excess Soil</i> in connection with the <i>Work</i> all in compliance with the <i>Excess Soil Regulation</i>.</p> <p>3.12.3 The <i>Contractor</i> shall indemnify and save harmless the <i>Owner</i>, their agents, officers, directors, administrators, employees, consultants, successors and assigns from and against the consequences of any and all health and safety infractions committed directly by the <i>Contractor</i>, or those for whom it is responsible at law, under the <i>Excess Soil Regulation</i>, or any environmental protection legislation, including the payment of legal fees and disbursements on a substantial indemnity basis. Such indemnity shall apply to the extent to which the <i>Owner</i> is not covered by insurance."</p>
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SC26 *NEW* GC 3.13 CONTRACTOR STANDARD OF CARE

SC26.1	3.13	<p><u>Add</u> a new GC 3.13 – CONTRACTOR STANDARD OF CARE as follows:</p> <p>"GC 3.13 CONTRACTOR STANDARD OF CARE</p> <p>"3.13.1 In performing its services and obligations under the <i>Contract</i>, the <i>Contractor</i> shall exercise the standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The <i>Contractor</i> acknowledges and agrees that throughout the <i>Contract</i>, the performance of the <i>Contractor's</i> obligations, duties and responsibilities shall be interpreted in accordance with this standard. The <i>Contractor</i> shall exercise the same standard of care, skill and diligence in respect of any <i>Products</i>, personnel or procedures which it may recommend to the <i>Owner</i> or employ on the <i>Project</i>.</p> <p>3.13.2 The <i>Contractor</i> further represents, covenants and warrants to the <i>Owner</i> that:</p> <p>.1 the personnel it assigns to the <i>Project</i> are appropriately experienced;</p> <p>.2 it has a sufficient staff of qualified and competent personnel to replace any of its appointed representatives, subject to the <i>Owner's</i> approval, in the event of death, incapacity, removal or resignation; and</p> <p>.3 there are no pending, threatened or anticipated claims, liabilities or contingent liabilities that would have a material effect on the financial ability of the <i>Contractor</i> to perform its work under the <i>Contract</i>."</p>
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PART 4 ALLOWANCES

SC27 GC 4.1 CASH ALLOWANCES

SC27.1	4.1.3	In GC 4.1.3 <u>delete</u> the words "through the <i>Consultant</i> " and <u>replace</u> them with "in writing."
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SC27.2	4.1.4	<p><u>Delete</u> GC 4.1.4 in its entirety and <u>replace</u> it with the following:</p> <p>"4.1.4 Where the actual cost of the <i>Work</i> under any cash allowance exceeds the amount of the allowance, any unexpended amounts from other cash allowances shall be reallocated, by the <i>Consultant</i> at the <i>Owner's</i> direction, to cover the shortfall, and, in that case, there shall be no additional amount added to the <i>Contract Price</i> for overhead and profit. Only where the actual cost of the <i>Work</i> under all cash allowances exceeds the total amount of all cash allowances shall the <i>Contractor</i> be compensated for the excess incurred and substantiated, plus an amount for overhead and profit on the excess only, as set out in the <i>Contract Documents</i>."</p>
SC27.3	4.1.5	<p><u>Delete</u> GC 4.1.5 in its entirety and <u>replace</u> it with the following:</p> <p>"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 <i>Contract Price</i> by <i>Change Order</i> without any adjustment for the <i>Contractor's</i> overhead and profit on such amount."</p>
SC27.4	4.1.8 and 4.1.9	<p><u>Add</u> new GC 4.1.8 and 4.1.9 as follows:</p> <p>"4.1.8 The <i>Owner</i> reserves the right to call, or to have the <i>Contractor</i> call, for competitive bids for portions of the <i>Work</i> to be paid for from cash allowances.</p> <p>4.1.9 Cash allowances cover the net cost to the <i>Contractor</i> of services, <i>Products</i>, <i>Construction Equipment</i>, freight, unloading, handling, storage, installation, provincial sales tax, and other authorized expenses incurred in performing any <i>Work</i> stipulated under the cash allowances but does not include any <i>Value Added Taxes</i> payable by the <i>Owner</i> and the <i>Contractor</i>."</p>

PART 5 PAYMENT

SC28 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

SC28.1	5.1	<u>Delete</u> GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER and all paragraphs thereunder, including any reference to GC 5.1 throughout the <i>Contract</i> .
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SC29 GC 5.2 APPLICATIONS FOR PAYMENT

SC29.1	5.2.1	<p><u>Delete</u> GC 5.2.1 and <u>replace</u> it with the following:</p> <p>"5.2.1 Upon execution of the <i>Contract</i>, and in any event prior to the <i>Contractor</i> submitting its first application for payment, the <i>Owner</i> shall issue a purchase order to the <i>Contractor</i> for the performance of the <i>Contract</i>. The number indicated on such purchase order must be clearly identifiable on all applications for payment. Applications for payment shall be dated the last day of each month or an alternative day of each month agreed to in writing by the parties, with each month representing one payment period under the <i>Contract</i> (each a "Payment Period"). Within 3 calendar days of the end of each <i>Payment Period</i>, the <i>Contractor</i> will submit a draft application for payment to the <i>Owner</i> and the <i>Consultant</i>. Upon receipt of the draft application for payment, and within 7 calendar days, a representative of each of the <i>Contractor</i>, <i>Owner</i>, and the <i>Consultant</i> shall attend a meeting to discuss and review the work completed during the <i>Payment Period</i>, including quantities, if applicable (the "Pre-Invoice Submission Meeting"). In the event that the scheduled date for the <i>Pre-Invoice Submission Meeting</i> is not a <i>Working Day</i>, the <i>Pre-Invoice Submission Meeting</i> shall occur on the next <i>Working Day</i>. The <i>Contractor</i> shall bring with it to the <i>Pre-Invoice Submission Meeting</i> the following:</p> <p>.1 a copy of the draft application for payment;</p>
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		<p>.2 any documents the <i>Contractor</i> is required to bring to the <i>Pre-Invoice Submission Meeting</i> as stipulated in the <i>Contract Documents</i> or as reasonably requested by the <i>Owner</i>; and</p> <p>.3 any other documents reasonably requested, in advance, by the <i>Owner</i> or the <i>Consultant</i>."</p>
SC29.2	5.2.2	<p><u>Delete</u> GC 5.2.2 in its entirety and <u>replace</u> it with the following:</p> <p>"5.2.2 Applications for payment shall be given in accordance with the following requirements:</p> <p>.1 Within 5 calendar days following the <i>Pre-Invoice Submission Meeting</i>, the <i>Contractor</i> shall deliver its application for payment to the <i>Owner</i> and to the <i>Consultant</i> for <i>Work</i> performed during the <i>Payment Period</i> ("Proper Invoice Submission Date") subject to the following:</p> <p>.1 if the fifth calendar day following the <i>Pre-Invoice Submission Meeting</i>, to which an invoice relates falls on a day that is not a <i>Working Day</i>, the <i>Proper Invoice Submission Date</i> shall be deemed to fall on the next <i>Working Day</i>.</p> <p>.2 The application for payment must be delivered to the <i>Owner</i> and to the <i>Consultant</i> in the same manner as a <i>Notice in Writing</i> during the hours of 9:00 am to 4:00pm (EST) on the <i>Proper Invoice Submission Date</i>. Delivery to the <i>Owner</i> shall be to the following email address:</p> <p>accounting@smcdsb.on.ca</p> <p>.3 If an application for payment is received after 4:00 p.m. (EST) on the applicable <i>Proper Invoice Submission Date</i>, the application for payment will not be considered or reviewed by the <i>Owner</i> and <i>Consultant</i> until the next <i>Proper Invoice Submission Date</i>. Notwithstanding the foregoing, the <i>Owner</i> in its sole and absolute discretion may elect to accept an application for payment submitted after 4:00 p.m. on the applicable <i>Proper Invoice Submission Date</i>; however, such acceptance shall not be construed as a waiver of any of its rights or waive or release the <i>Contractor's</i> obligations to strictly comply with the requirements prescribed in this subparagraph 5.2.2.3.</p> <p>.4 No applications for payment shall be accepted by the <i>Owner</i> prior to the <i>Proper Invoice Submission Date</i>.</p> <p>.5 All applications for payment shall include all of the requirements for a <i>Proper Invoice</i> prescribed by the <i>Construction Act</i> and this <i>Contract</i> and be dated the last day of the applicable <i>Payment Period</i>;"</p>
SC29.3	5.2.3	<p><u>Delete</u> GC 5.2.3 and <u>replace</u> it with the following:</p> <p>"5.2.3 The amount claimed shall be for the value, proportionate to the amount of the <i>Contract</i>, of <i>Work</i> performed and <i>Products</i> delivered and incorporated into the <i>Work</i> as of the last date of the applicable <i>Payment Period</i>. Materials may also be deemed to be supplied to an improvement, for payment purposes, when, in the <i>Owner's</i> opinion, they are placed and properly secured on the land on which the improvement is made, or placed upon land designated by the <i>Owner</i> or agent of the <i>Owner</i>, but placing the materials on the land so designated does not, of itself, make that land subject to a lien. No amount claimed shall include products delivered and incorporated into the work, unless the products are free and clear of all security interests, liens and other claims of third parties. No amount claimed shall include <i>Products</i> delivered to the <i>Place of the Work</i> unless the <i>Products</i> are free and clear of all security interests, liens, and other claims of third parties."</p>

SC29.4	5.2.4	After the word " <i>Consultant</i> " in GC 5.2.4 <u>add</u> the words "and the <i>Owner</i> "
SC29.5	5.2.5	After the word " <i>Consultant</i> " in GC 5.2.5 <u>add</u> the words "or the <i>Owner</i> ".
SC29.6	5.2.6	In GC 5.2.6, <u>delete</u> the word " <i>Consultant</i> " and <u>replace</u> it with " <i>Owner</i> ".
SC29.7	5.2.9	<p><u>Add</u> new 5.2.9 as follows:</p> <p>"5.2.9 The <i>Contractor</i> shall prepare and maintain current as-built drawings which shall consist of the <i>Drawings</i> and <i>Specifications</i> revised by the <i>Contractor</i> during the <i>Work</i>, showing changes to the <i>Drawings</i> and <i>Specifications</i>, which current as-built drawings shall be maintained by the <i>Contractor</i> and made available to the <i>Consultant</i> for review with each application for progress payment. The <i>Consultant</i> shall recommend to the <i>Owner</i> that the <i>Owner</i> retain a reasonable amount for the value of the as-built drawings not presented for review."</p>

SC30 GC 5.3 PAYMENT

SC30.1	5.3.1	<p><u>Delete</u> GC 5.3.1 in its entirety, including all subparagraphs thereunder, and <u>replace</u> it with the following:</p> <p>"5.3.1 After receipt by the <i>Owner</i> and the <i>Consultant</i> of an application for payment submitted by the <i>Contractor</i> in accordance with GC 5.2 - APPLICATIONS FOR PAYMENT:</p> <p>.1 the <i>Consultant</i> will either:</p> <p>(a) issue to the <i>Owner</i> with a copy to the <i>Contractor</i>, a progress payment certificate in the amount applied for by the <i>Contractor</i> in the <i>Proper Invoice</i>, or</p> <p>(b) issue to the <i>Owner</i>, with a copy to the <i>Contractor</i>, a certificate for payment for an amount determined by the <i>Consultant</i> to be properly due to the <i>Contractor</i> after applying any credits, withheld amounts, or other set-offs which the <i>Consultant</i> has determined that the <i>Owner</i> is entitled to notwithstanding any notice of dispute or disagreement that the <i>Contractor</i> may have served, along with the <i>Consultant's</i> reasons why an amount other than what is claimed in the <i>Proper Invoice</i> is properly due to the <i>Contractor</i>, which finding the <i>Owner</i> may accept or amend prior to the <i>Owner</i> issuing a <i>Notice of Non-Payment</i>, if any, in accordance with GC 5.3.2;</p> <p>.2 the <i>Owner</i> shall make payment to the <i>Contractor</i> on account as provided in Article A-5 PAYMENT,</p> <p>(a) in the amount stated in the certificate for payment, or</p> <p>(b) in the amount stated in the certificate for payment less such amount stated in the <i>Owner's Notice of Non-Payment</i> issued pursuant to GC 5.3.3,</p> <p>on the 28th calendar day after receipt of a <i>Proper Invoice</i>, unless such 28th calendar day lands on a day that is other than a <i>Working Day</i>, in which case payment shall be made on the next <i>Working Day</i> after such 28th day."</p>
SC30.2	5.3.2 to 5.3.7	<p><u>Add</u> new paragraphs 5.3.2, 5.3.3, 5.3.4, 5.3.4, 5.3.5, 5.3.6, and 5.3.7 as follows:</p> <p>5.3.2 All payments to the <i>Contractor</i> shall be processed using electronic funds transfer ("EFT") and deposited directly to the <i>Contractor's</i> bank account unless agreed to</p>

		<p>otherwise by the <i>Contractor</i> and the <i>Owner</i> in writing. Prior to the <i>Contractor</i> submitting its first application for payment, the <i>Owner</i> and the <i>Contractor</i> shall exchange such information as is necessary to facilitate <i>EFT</i> payments.</p> <p>5.3.3 In the event that the application for payment delivered by the <i>Contractor</i> pursuant to GC 5.2 - APPLICATIONS FOR PAYMENT does not include the requirements for a <i>Proper Invoice</i> or where the <i>Owner</i> disputes the amount claimed as payable in the <i>Proper Invoice</i>, then the <i>Owner</i> shall within 14 calendar days of receipt of the application for payment, issue a <i>Notice of Non-Payment</i> (Form 1.1).</p> <p>5.3.4 Where the <i>Owner</i> has delivered a <i>Notice of Non-Payment</i>, the <i>Owner</i> and the <i>Contractor</i> shall first engage in good faith negotiations to resolve the dispute. If within 5 calendar days following the issuance of a <i>Notice of Non-Payment</i>, despite good faith efforts by both parties and the assistance of the <i>Consultant</i>, the <i>Owner</i> and the <i>Contractor</i> cannot resolve the dispute, either party may commence an <i>Adjudication</i> in accordance with the procedures set out in the <i>Construction Act</i>. Any portion of the <i>Proper Invoice</i> which is not the subject of the <i>Notice of Non-Payment</i> shall be payable within the time period set out in GC 5.3.1.2.</p> <p>5.3.5 Provided that the <i>Owner</i> complies with its obligations under the <i>Construction Act</i>, and subject to any interim determination of an adjudicator in accordance with any <i>Adjudication</i>, and where applicable, a final determination made in accordance with the dispute resolution processes prescribed by this <i>Contract</i>, the <i>Owner</i> shall be entitled to claim in a <i>Notice of Non-Payment</i> a right to deduct from or, set off against, any payment of the <i>Contract Price</i>:</p> <ul style="list-style-type: none"> .1 any amount expended by the <i>Owner</i> in exercising the <i>Owner's</i> rights under this <i>Contract</i> to perform any of the <i>Contractor's</i> obligations that the <i>Contractor</i> has failed to perform; .2 any damages, costs or expenses (including, without limitation, reasonable legal fees and expenses) incurred by the <i>Owner</i> as a result of the failure of the <i>Contractor</i> to perform any of its obligations under the <i>Contract</i>; .3 any other amount owing from the <i>Contractor</i> to the <i>Owner</i> under this <i>Contract</i>. <p>5.3.6 The amounts disputed and described under the <i>Notice of Non-Payment</i> shall be held by the <i>Owner</i> until all disputed amounts of the <i>Proper Invoice</i> have been resolved pursuant to PART 8 – DISPUTE RESOLUTION.</p> <p>5.3.7 The <i>Contractor</i> represents, warrants, and covenants to the <i>Owner</i> that it is familiar with its prompt payment and trust obligations under the <i>Construction Act</i> and will take all required steps and measures to ensure that it complies with the applicable prompt payment and trust provisions under the <i>Construction Act</i> including, without limitation, section 8.1 of the <i>Construction Act</i>. Evidence of the <i>Contractor's</i> compliance under this GC 5.3.7, including evidence demonstrating that all <i>EFTs</i> by the <i>Owner</i> to the <i>Contractor</i> are kept in a bank account in the <i>Contractor's</i> name will be made available to the <i>Owner</i> within 5 <i>Working Days</i> following receipt by the <i>Contractor</i> of a <i>Notice in Writing</i> making such request."</p>
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SC31 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK- AND PAYMENT OF HOLDBACK

SC31.1	GC 5.4	<p><u>Delete</u> GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK in its entirety and <u>replace</u> it with the following:</p> <p>"GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK</p> <p>5.4.1 When the <i>Contractor</i> considers that <i>Substantial Performance of the Work</i> has been</p>
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		<p>achieved, the <i>Contractor</i> shall prepare and submit to the <i>Consultant</i> and the <i>Owner</i> a comprehensive deficiency list of items to be completed or corrected, including any incomplete <i>Close-Out Documentation</i>, and apply for a review by the <i>Consultant</i> and the <i>Owner</i> to establish <i>Substantial Performance of the Work</i>. Failure to include an item on the list does not alter the responsibility of the <i>Contractor</i> to complete the <i>Contract</i>.</p>
	5.4.2	<p>Prior to, or as part of its written application for <i>Substantial Performance of the Work</i> the <i>Contractor</i> shall submit to the <i>Consultant</i> submit to the <i>Consultant</i> all closeout documentation required by the <i>Contract Documents</i>, including but not limited to, warranties, manuals, guarantees, as-built drawings and all other relevant literature from suppliers and manufacturers including, but not limited to, where applicable (the "Close-Out Documentation"):</p> <ul style="list-style-type: none"> .1 equipment, maintenance, and operations manuals; .2 equipment specifications, data sheets and brochures, parts lists and assembly drawings, performance curves and other related data; .3 line drawings, value charts and control sheets sequences with description of the sequence of operations; .4 warranty documents; .5 guarantees; .6 certificates; .7 service and maintenance reports; .8 <i>Specifications</i>; .9 <i>Shop Drawings</i>; .10 coordination drawings; .11 testing and balancing results and reports; .12 <i>Commissioning</i> and quality assurance documentation; .13 distribution system diagrams; .14 spare parts; .15 samples; .16 existing reports and correspondence from authorities having jurisdiction in the <i>Place of the Work</i>; .17 inspection certificates; .18 red-lined record drawings from the construction trailer in two copies and .19 other materials or documentation required to be submitted under the <i>Contract</i>.
	5.4.3	<p>The <i>Consultant</i> will review the <i>Work</i> to verify the validity of the application and shall promptly, and in any event, no later than 30 calendar days after receipt of the <i>Contractor's</i> complete deficiency list and application:</p> <ul style="list-style-type: none"> .1 prepare a final deficiency list incorporating all items to be completed or corrected, including any incomplete or unsubmitted <i>Close-Out Documentation</i>. Each item shall have an indicated value for correction or completion and the determination of the total value of such items shall be determined pursuant to GC 5.8 – DEFICIENCY HOLDBACK. The final deficiency list complete with values is to be included with the <i>Consultant's</i> draft verification and shall be reviewed with the <i>Owner</i> prior to the <i>Consultant</i> rendering a determination in accordance with GC 5.4.3.2 .2 having completed the requirements set out in GC 5.4.3.1, <ul style="list-style-type: none"> (a) the <i>Consultant</i> shall advise the <i>Contractor</i> in writing that the <i>Work</i> or the designated portion of the <i>Work</i> is not substantially performed and give reasons why, or (b) the <i>Consultant</i> shall state the date of <i>Substantial Performance of the Work</i> in a certificate and issue a copy of that certificate to each the <i>Owner</i> and the <i>Contractor</i>.

		<p>5.4.4 Following the issuance of the certificate of <i>Substantial Performance of the Work</i> referenced in subparagraph 5.4.3.2(b):</p> <ul style="list-style-type: none"> .1 The Contractor shall publish, in a construction trade newspaper in the area of the location of the Work, a copy of the certificate of <i>Substantial Performance of the Work</i> referred to in GC 5.4.2.2(b) within seven (7) calendar days of receiving a copy of the certificate signed by the <i>Consultant</i>, and the Contractor shall provide suitable evidence of the publication to the <i>Consultant</i> and the <i>Owner</i>. If the Contractor fails to publish such notice, the Owner shall be at liberty to publish said certificate and back-charge the Contractor its reasonable costs for doing so; .2 The Contractor shall complete the <i>Work</i> within forty (40) calendar days of the date certified as the date of <i>Substantial Performance of the Work</i>; .3 Notwithstanding any other provisions of the <i>Contract</i>, no payments will be processed between <i>Substantial Performance of the Work</i> and <i>Ready-for-Takeover</i>; .4 The Owner reserves the right to contract out any or all unfinished <i>Work</i> if it has not been completed within forty (40) days of <i>Substantial Performance of the Work</i> using, without limitation, the funds retained in accordance with GC 5.8 - DEFICIENCY HOLDBACK, without prejudice to any other right or remedy and without affecting the warranty period. The cost to the Owner of completing the <i>Work</i> including Owner and <i>Consultant</i> wages and materials shall be deducted from the <i>Contract Price</i>. <p>5.4.5 After publication of the certificate of the <i>Substantial Performance of the Work</i>, and provided that the Contractor has completed performance of the <i>Work</i> within the 40 calendar days following certification of <i>Substantial Performance of the Work</i>, the Contractor may submit an application for payment of the outstanding <i>Construction Act</i> holdback amount, which application for payment shall:</p> <ul style="list-style-type: none"> .1 include all of the requirements listed in EXHIBIT "1" - PROJECT SPECIFIC REQUIREMENTS FOR A PROPER INVOICE, as applicable to the application for payment of the holdback amount; and .2 include a statement that the Contractor has not received any written notices of lien or any claims for liens from any <i>Subcontractor</i> or <i>Supplier</i>. <p>5.4.6 The <i>Construction Act</i> holdback amount shall become due and payable the day immediately following the expiration of the holdback period prescribed by the <i>Construction Act</i> (in most cases being the 61st calendar day following the publication of the certificate of <i>Substantial Performance of the Work</i> referred to in GC 5.4.4.1), subject to the occurrence of any of the following:</p> <ul style="list-style-type: none"> .1 the preservation of a lien in respect of the <i>Project</i> that has not been satisfied, discharged or otherwise provided for in accordance with the <i>Construction Act</i>; .2 receipt by the Owner of a written notice of lien that has not been satisfied, discharged or otherwise provided for in accordance with the <i>Construction Act</i>; or .3 prior to the expiry of 40 calendar days following the publication of the certificate of <i>Substantial Performance of the Work</i>, the Owner publishes a <i>Notice of Non-Payment</i> of holdback in accordance with the <i>Construction Act</i> (Form 6), setting out the amount of holdback that will not be paid, which may include non-payment to secure the correction of deficiencies and/or the completion of the <i>Work</i>. <p>5.4.7 Notwithstanding the Owner's obligation to make payment of the holdback amount in accordance with GC 5.4.6, the processing of such payment remains subject to the Owner's internal <i>EFT</i> timing limitations. The Owner covenants, and the Contractor</p>
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		agrees, that payment of the holdback shall be made by <i>EFT</i> at the first opportunity during the <i>Owner's</i> normal processing of <i>EFTs</i> upon the holdback becoming due in accordance with GC 5.4.6..
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SC32 GC 5.5 FINAL PAYMENT

SC32.1	GC 5.5	<p><u>Delete</u> GC 5.5 in its entirety, including all subparagraphs thereunder and <u>replace</u> it with the following:</p> <p>"5.5.1 When <i>Ready-for-Takeover</i> has been achieved in accordance with GC 12.1 – READY-FOR-TAKEOVER and the <i>Contractor</i> considers the <i>Work</i> is complete, and after the <i>Contractor</i>, the <i>Owner</i>, and the <i>Consultant</i> have attended a <i>Pre-Invoice Submission Meeting</i> analogous to the requirement in GC 5.2.1 (the "<i>Final Pre-Invoice Submission Meeting</i>"), the <i>Contractor</i> may submit an application for final payment to the <i>Owner</i> and to the <i>Consultant</i>, which application for payment shall:</p> <p>.1 include all of the requirements set out in GC 5.2.2, including without limitation those requirements listed in APPENDIX "1" - PROJECT SPECIFIC REQUIREMENTS FOR A PROPER INVOICE that are specific to an application for final payment; and</p> <p>.2 if applicable, (a) a certificate from the <i>Consultant</i> or written confirmation from the <i>Owner</i> that the deficiencies or incomplete <i>Work</i> waived by the <i>Owner</i> pursuant to GC 12.1.2 have been fully rectified as of the date of the <i>Contractor's</i> application for final payment, and/or (b) written confirmation, signed by the <i>Owner</i> and the <i>Contractor</i>, that the <i>Contract Price</i> has been reduced by a specified amount in exchange for the <i>Owner</i> releasing the <i>Contractor</i> of its obligation to rectify the certain outstanding deficiencies and/or incomplete <i>Work</i> waived by the <i>Owner</i> pursuant to GC 12.1.2, as detailed in such written confirmation.</p> <p>5.5.2 No later than 5 calendar days prior to the <i>Final Pre-Invoice Submission Meeting</i>, the <i>Contractor</i> will, if not already provided, submit to the <i>Consultant</i> all <i>Close-Out Documentation</i>.</p> <p>5.5.3 Delivery of all <i>Close-Out Documentation</i> is a requirement for the <i>Proper Invoice</i> for final payment.</p> <p>5.5.4 After receipt by the <i>Owner</i> and the <i>Consultant</i> of an application for payment submitted by the <i>Contractor</i> that is a <i>Proper Invoice</i> and by no later than 10 calendar days after the receipt of the <i>Proper Invoice</i>:</p> <p>.1 the <i>Consultant</i> will either:</p> <p>(a) issue to the <i>Owner</i> with a copy to the <i>Contractor</i>, a progress payment certificate in the amount applied for by the <i>Contractor</i> in the <i>Proper Invoice</i>, or</p> <p>(b) deliver a finding to the <i>Owner</i> with reasons why an amount other than what is claimed in the <i>Proper Invoice</i> is properly due to the <i>Contractor</i>, which finding the <i>Owner</i> may accept or amend prior to issuing a <i>Notice of Non-Payment</i> (Form 1.1), if any, in accordance with GC 5.5.2;</p> <p>.2 the <i>Owner</i> shall make payment to the <i>Contractor</i> on account as provided in Article A-5 PAYMENT,</p> <p>(a) in the amount stated in the certificate for payment, or</p>
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		<p>(b) in the amount stated in the certificate for payment less such amount stated in the <i>Owner's Notice of Non-Payment</i> issued pursuant to GC 5.5.5,</p> <p>on the 28th calendar day after receipt of a <i>Proper Invoice</i>, unless such 28th calendar day lands on a day that is other than a <i>Working Day</i>, in which case payment shall be made on the next <i>Working Day</i> after such 28th day.</p> <p>5.5.5 In the event that the application for final payment delivered by the <i>Contractor</i> does not include the requirements of GC 5.5.1 (including the requirements for a <i>Proper Invoice</i>) and GC 5.5.2 or where the <i>Owner</i> disputes the amount claimed as payable in the <i>Proper Invoice</i>, then the <i>Owner</i> shall within 14 calendar days of receipt of the application for payment, issue a <i>Notice of Non-Payment</i>. Where the <i>Owner</i> has delivered a <i>Notice of Non-Payment</i>, as specified under this GC 5.5.5, the <i>Owner</i> and the <i>Contractor</i> shall first engage in good faith negotiations to resolve the dispute. If within 5 calendar days following the issuance of a <i>Notice of Non-Payment</i>, despite good faith efforts by both parties with the assistance of the <i>Consultant</i>, the <i>Owner</i> and the <i>Contractor</i> cannot resolve the dispute, either party may commence an <i>Adjudication</i> in accordance with the procedures set out in the <i>Construction Act</i>. Any portion of the <i>Proper Invoice</i> which is not the subject of the <i>Notice of Non-Payment</i> shall be payable within the time period set out in GC 5.5.4.2.</p> <p>5.5.6 Subject to the provisions of the <i>Construction Act</i> and any other rights conferred on the <i>Owner</i> at law or under this <i>Contract</i> to withhold payment or backcharge or set-off against payment, the <i>Owner</i> shall pay the amount payable under a <i>Proper Invoice</i> for final payment in accordance with the <i>Construction Act</i>.</p> <p>5.5.7 When the <i>Consultant</i> issues certificate of completion in accordance with GC 5.5.4.1, the <i>Consultant</i> shall also issue a certificate for release of any holdback for finishing work amount. In accordance with the <i>Construction Act</i>, the <i>Owner</i> may retain any amounts which are required by law to satisfy any liens against the <i>Work</i>, in respect of any third party claims made to the <i>Owner</i> in respect of the <i>Contract</i> or the <i>Work</i>, and in respect of any claims the <i>Owner</i> may have against the <i>Contractor</i>. Subject to the foregoing, the <i>Owner</i> shall release the holdback in accordance with the <i>Construction Act</i>."</p>
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SC33 GC 5.6 DEFERRED WORK

SC33.1	5.6.1	<p><u>Delete</u> paragraph 5.6.1 and <u>replace</u> with the following:</p> <p>"5.6.1 If because of conditions reasonably beyond the control of the <i>Contractor</i>, there are items of work that cannot be performed, payment in full for that portion of the <i>Work</i> which has been performed as certified by the <i>Consultant</i> shall not be withheld or delayed by the <i>Owner</i> on account thereof, but the <i>Owner</i> may withhold, subject to its requirement to issue a <i>Notice of Non-Payment</i> under the <i>Construction Act</i>, until the remaining portion of the <i>Work</i> is finished, only such an amount that the <i>Consultant</i> determines is sufficient and reasonable to cover the cost of performing such remaining work. The remaining work shall be valued as deficient work as defined in GC 5.8.1."</p>
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SC34 *NEW* GC 5.8 DEFICIENCY HOLDBACK

SC34.13	5.8.1	<p><u>Add</u> new GC 5.8 – DEFICIENCY HOLDBACK as follows:</p> <p>"GC 5.8 DEFICIENCY HOLDBACK</p>
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		<p>5.8.1 Notwithstanding any provisions contained in the <i>Contract Documents</i> concerning certification and release of monies to the <i>Contractor</i>, the <i>Owner</i> reserves the right to establish a deficiency holdback, at the time of the review for <i>Substantial Performance of the Work</i>, based on a 200% dollar value of the deficiencies listed by the <i>Consultant</i>.</p> <p>5.8.2 In performing the calculation under GC 5.8.1,</p> <p>.1 no individual deficiency will be valued at less than two hundred dollars (\$200.00);</p> <p>.2 where two copies of the red-lined record drawings have not been submitted prior to or as part of the <i>Contractor's</i> application for <i>Substantial Performance of the Work</i>, an amount not to exceed one (1) percent of the <i>Contract Price</i>, and no less than one-half (1/2) percent of the <i>Contract Price</i>, shall be the amount retained by the <i>Owner</i> as part of the deficiency holdback until such time as the red-lined record drawings are submitted and approved.</p> <p>5.8.2 The deficiency holdback shall be due and payable to the <i>Contractor</i> on the 61st day following completion of all of the deficiencies listed by the <i>Consultant</i>, there being no claims for lien registered against the title to the <i>Place of the Work</i> issued in accordance with the <i>Construction Act</i>, and less any amounts disputed under an <i>Owner's Notice of Non-Payment</i> (Form 1.1)."</p>
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PART 6 CHANGES IN THE WORK

SC35 GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

SC35.1	6.1.2	<p><u>Add</u> the following to the end of GC 6.1.2:</p> <p>"This requirement is of the essence and it is the express intention of the parties that any claims by the <i>Contractor</i> for a change in the <i>Contract Price</i> and/or <i>Contract Time</i> shall be barred unless there has been strict compliance with PART 6 - CHANGES IN THE WORK. No verbal dealings between the parties and no implied acceptance of alterations or additions to the <i>Work</i> and no claims that the <i>Owner</i> has been unjustly enriched by any alteration or addition to the <i>Work</i>, whether in fact there is any such unjust enrichment or not, shall be the basis of a claim for additional payment under this <i>Contract</i>, an increase to the <i>Contract Price</i>, or a claim for any extension of the <i>Contract Time</i>."</p>
SC35.2	6.1.3 to 6.1.8	<p><u>Add</u> new paragraphs 6.1.3, 6.1.4, 6.1.5, 6.1.6, 6.1.7 and 6.1.8 as follows:</p> <p>"6.1.3 The <i>Contractor</i> agrees that changes resulting from construction coordination, including but not limited to, site surface conditions, site coordination, and <i>Subcontractor and Supplier</i> coordination are included in the <i>Contract Price</i> and the <i>Contractor</i> shall be precluded from making any claim for a change in the <i>Contract Price</i> as a result of such changes.</p> <p>6.1.4 Labour costs shall be actual, prevailing rates at the <i>Place of the Work</i> paid to workers, plus statutory charges on labour including WSIB, unemployment insurance, Canada pension, vacation pay, hospitalization and medical insurance. The <i>Contractor</i> shall provide these rates, when requested by the <i>Consultant</i>, for review and/or agreement.</p> <p>6.1.5 Quotations for changes to the <i>Work</i> shall only include <i>Direct Costs</i> and be accompanied by itemized breakdowns together with detailed, substantiating quotations or cost vouchers from <i>Subcontractors</i> and <i>Suppliers</i>, submitted in a format acceptable to the <i>Consultant</i> and shall include any <i>Direct Costs</i> associated with extensions in <i>Contract Time</i>.</p>

		<p>6.1.6 When both additions and deletions covering related <i>Work</i> or substitutions are involved in a change to the <i>Work</i>, payment, including <i>Overhead</i> and profit, shall be calculated on the basis of the net difference, if any, with respect to that change in the <i>Work</i>.</p> <p>6.1.7 No extension to the <i>Contract Time</i> shall be granted for changes in the <i>Work</i> unless the <i>Contractor</i> can clearly demonstrate that such changes significantly alter the overall construction schedule submitted at the commencement of the <i>Work</i>. Extensions of <i>Contract Time</i> and all associated costs, if approved, shall be included in the relevant <i>Change Order</i>.</p> <p>6.1.8 When a change in the <i>Work</i> is proposed or required, the <i>Contractor</i> shall within 10 calendar days submit to the <i>Consultant</i> for review a claim for a change in <i>Contract Price</i> and/or <i>Contract Time</i>. Should 10 calendar days be insufficient to prepare the submission, the <i>Contractor</i> shall within 5 calendar days, advise the <i>Consultant</i> in writing of the proposed date of submission of the claim. Claims submitted after the dates prescribed herein will not be considered."</p>
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SC36 GC 6.2 CHANGE ORDER

SC36.1	6.2.1	<p>In paragraph 6.2.1 after the last sentence in the paragraph <u>add</u> the following:</p> <p>"The adjustment in the <i>Contract Time</i> and the <i>Contract Price</i> shall include an adjustment, if any, for delay or for the impact that the change in the <i>Work</i> has on the <i>Work</i> of the <i>Contractor</i>, and once such adjustment is made, the <i>Contractor</i> shall be precluded from making any further claims for delay or impact with respect to the change in the <i>Work</i>."</p>
SC36.2	6.2.3 to 6.2.5	<p><u>Add</u> new paragraphs 6.2.3, 6.2.4, and 6.2.5 as follows:</p> <p>"6.2.3 The value of a change shall be determined in one or more of the following methods as directed by the <i>Consultant</i>:</p> <p>.1 by estimate and acceptance of a lump sum;</p> <p>.2 by negotiated unit prices which include the <i>Contractor's</i> overhead and profit, or;</p> <p>.3 by the actual <i>Direct Cost</i> to the <i>Owner</i>, such costs to be the actual cost after all credits included in the change have been deducted, plus the following ranges of mark-up on such costs:</p> <p>.1 for <i>Change Orders</i> with a value of \$0 to \$15,000 the total <i>Subcontractor/Supplier</i> mark-up including <i>Overhead</i> and profit shall be 10% and the total <i>Contractor</i> mark-up including overhead and profit shall be 5%.</p> <p>.2 for <i>Change Orders</i> in excess of \$15,000, the total <i>Subcontractor/Supplier</i> mark-up including <i>Overhead</i> and profit shall be 5% and the total <i>Contractor</i> mark-up including <i>Overhead</i> and profit shall be 3%.</p> <p>6.2.4 All quotations shall include <i>Direct Costs</i> and be submitted in a complete manner listing:</p> <p>.1 quantity of each material,</p> <p>.2 unit cost of each material,</p> <p>.3 man hours involved,</p> <p>.4 cost per hour,</p> <p>.5 <i>Subcontractor</i> quotations submitted listing items 1 to 4 above and item 6 below.</p>

		.6 mark-up.
	6.2.5	The <i>Owner</i> and the <i>Consultant</i> will not be responsible for delays to the <i>Work</i> resulting from late, incomplete or inadequately broken-down valuations submitted by the <i>Contractor</i> ."

SC37 GC 6.3 CHANGE DIRECTIVE

SC37.1	6.3.6.1	<p><u>Amend</u> paragraph 6.3.6.1 by deleting the final period and adding the following:</p> <p>“.1 Ten percent (10%) for profit plus five percent (5%) for overhead on work by the <i>Contractor</i>'s own forces up to the value of \$15,000 and five percent (5%) for profit plus three percent (3%) for <i>Overhead</i> on work by the <i>Contractor</i>'s own forces in excess of \$15,000 and,</p> <p>.2 Ten percent (10%) fee on amounts paid to <i>Subcontractors</i> or <i>Suppliers</i> under subparagraph 6.3.7.9 for changes up to the value of \$15,000 and five percent (5%) on changes over \$15,000.</p> <p>Unless a <i>Subcontractor</i>'s or <i>Supplier</i>'s price has been approved by the <i>Owner</i>, the <i>Subcontractor</i> or <i>Supplier</i> shall be entitled to its actual net cost as determined in accordance with paragraph 6.3.7, plus ten percent (10%) for profit and five percent (5%) for <i>Overhead</i> on such actual net cost for changes in the <i>Work</i>, up to the value of \$15,000 and five percent (5%) for profit and three percent (3%) for overhead on such actual net cost changes in the <i>Work</i> in excess of \$15,000."</p>
SC37.2	6.3.6.2	<p><u>Delete</u> paragraph 6.3.6.2 and <u>replace</u> it with the following:</p> <p>“.2 If a change in the <i>Work</i> results in a net decrease in the <i>Contract Price</i>, the amount of the credit shall be the net cost, without deduction for <i>Overhead</i> or profit."</p>
SC37.3	6.3.7.1(4)	<u>Delete</u> GC 6.3.7.1(4).
SC37.4	6.3.7.7	Amend GC 6.3.7.7 by <u>deleting</u> the words "described in paragraph 6.3.7.1" and <u>replacing</u> them with "approved by the <i>Owner</i> in writing and in advance of any such expenses being incurred;"
SC37.5	6.3.7.9	Amend GC 6.3.7.9 by <u>adding</u> the following to the end of the paragraph: "...when specifically requested by the <i>Owner</i> or as directed by the <i>Consultant</i> ;"
SC37.6	6.3.7.10	Amend GC 6.3.7.10 by <u>adding</u> the following to the end of the paragraph: ", provided that such amounts are not caused by negligent acts, omissions, or default of the <i>Contractor</i> or <i>Subcontractor</i> ;"
SC37.7	6.3.7.13	<u>Delete</u> GC 6.3.7.13.
SC37.8	6.3.7.15	<u>Delete</u> GC 6.3.7.15.
SC37.9	6.3.7.17	<u>Delete</u> GC 6.3.7.17 in its entirety including all subparagraphs.
SC37.10	6.3.11	<p><u>Delete</u> GC 6.3.11 and <u>replace</u> it with the following:</p> <p>"6.3.11 The value of the <i>Work</i> performed as a result of a <i>Change Directive</i> shall not be eligible to be included in progress payments until the amount, including the method for determining the amount, of such <i>Change Directive</i> has been determined."</p>

SC38 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

SC38.1	6.4.1	<p><u>Delete</u> paragraph 6.4.1 in its entirety and <u>replace</u> with the following:</p> <p>“6.4.1.1 Prior to the submission of the bid on which the Contract was awarded, the Contractor confirms that it carefully investigated the Place of the Work insofar as the Place of Work was available for investigation and, in doing so, applied to that investigation the degree of care and skill required by paragraph 3.14.1</p> <p>6.4.1.2 No claim by the <i>Contractor</i> will be considered by the <i>Owner</i> or the <i>Consultant</i> in connection with conditions which could reasonably have been ascertained by such investigation or other due diligence undertaken prior to the execution of the <i>Contract</i>.</p>
SC38.2	6.4.2	<p><u>Amend</u> paragraph 6.4.2 by <u>adding</u> a new first sentence as follows:</p> <p>“Having regard to paragraph 6.4.1, if the <i>Contractor</i> believes that the conditions of the <i>Place of the Work</i> differ materially from those reasonably anticipated, differ materially from those indicated in the <i>Contract Documents</i> or were concealed from discovery notwithstanding the conduct of the investigation described in paragraph 6.4.1, it shall provide the <i>Owner</i> and the <i>Consultant</i> with <i>Notice in Writing</i> no later than five (5) <i>Working Days</i> after the first observation of such conditions.”</p> <p>-and-</p> <p><u>amend</u> the existing second sentence of paragraph 6.4.2 in the second line, following the word “materially” by <u>adding</u> the words “or were concealed from discovery notwithstanding the conduct of the investigation described in paragraph 6.4.1,”.</p>
SC38.3	6.4.3	<p><u>Delete</u> paragraph 6.4.3 in its entirety and <u>substitute</u> the following:</p> <p>“6.4.3 If the <i>Consultant</i> makes a finding pursuant to paragraph 6.4.2 that no change in the <i>Contract Price</i> or the <i>Contract Time</i> is justified, the <i>Consultant</i> shall report in writing the reasons for this finding to the <i>Owner</i> and the <i>Contractor</i>.”</p>
SC38.4	6.4.5	<p><u>Add</u> new paragraph 6.4.5 as follows:</p> <p>“6.4.5 No claims for additional compensation or for an extension of <i>Contract Time</i> shall be allowed if the <i>Contractor</i> fails to give <i>Notice in Writing</i> to the <i>Owner</i> or <i>Consultant</i>, as required by paragraph 6.4.2.”</p>

SC39 GC 6.5 DELAYS

SC39.1	6.5.1	<p>In paragraph 6.5.1 <u>delete</u> the words after the word “for” in the fourth line and <u>replace</u> them with the words “...reasonable <i>Direct Costs</i> directly flowing from the delay, but excluding any consequential, indirect or special damages (including, without limitation, loss of profits, loss of opportunity or loss of productivity).”</p>
SC39.2	6.5.2	<p><u>Delete</u> GC 6.5.2 in its entirety and <u>replace</u> it with the following:</p> <p>“6.5.2 If the <i>Contractor</i> is delayed in the performance of the <i>Work</i> by a stop work order issued by a court or other public authority and providing that such order was issued on account of a direct breach, violation, contravention, or a failure to abide by any laws, ordinances, rules, regulations, or codes by the <i>Owner</i>, <i>Other Contractor(s)</i>, or the <i>Consultant</i>, and relating to the <i>Work</i> or the <i>Place of the Work</i>, then the <i>Contract Time</i> shall be extended for such reasonable time as the <i>Consultant</i> may determine. The <i>Contractor</i> shall be reimbursed by the <i>Owner</i> for reasonable <i>Direct Costs</i> directly flowing from the delay, but excluding any consequential, indirect or special damages (including, without limitation, loss of profits, loss of opportunity or loss of productivity).”</p>

SC39.3	6.5.3	<p><u>Delete</u> paragraph 6.5.3 in its entirety and <u>replace</u> with the following:</p> <p>“6.5.3 If either party is delayed in the performance of their obligations under this <i>Contract</i> by <i>Force Majeure</i>, then the <i>Contract Time</i> shall be extended for such reasonable time as the <i>Owner</i> and the <i>Contractor</i> shall agree. The extension of time shall not be less than the time lost as a result of the event causing the delay, unless the parties agree to a shorter extension. Neither party shall be entitled to payment for costs incurred by such delays. Upon reaching agreement on the extension of the <i>Contract Time</i> attributable to the <i>Force Majeure</i> event, the <i>Owner</i> and the <i>Contractor</i> shall execute a <i>Change Order</i> indicating the length of the extension to the <i>Contract Time</i> and confirming that there are no costs payable by the either party for the extension of <i>Contract Time</i>. However, if at the time an event of <i>Force Majeure</i> arises a party is in default of its obligations under the <i>Contract</i> and has received a notice of default pursuant to PART 7 – DEFAULT NOTICE, this paragraph 6.5.3 shall not excuse a party from its obligation to cure the default(s). For greater certainty, the defaulting party, to the extent possible, must continue to address and cure the default notwithstanding an event of <i>Force Majeure</i>.”</p>
SC39.4	6.5.4	<p><u>Delete</u> paragraph 6.5.4 in its entirety and <u>replace</u> it with the following:</p> <p>“6.5.4 No extension or compensation shall be made for delay or impact on the <i>Work</i> unless notice in writing of a claim is given to the <i>Consultant</i> not later than ten (10) <i>Working Days</i> after the commencement of the delays or impact on the <i>Work</i>, provided however, that, in the case of a continuing cause of delay or impact on the <i>Work</i>, only one notice of claim shall be necessary.”</p>
SC39.5	6.5.6 to 6.5.8	<p><u>Add</u> new paragraphs 6.5.6, 6.5.7 and 6.5.8 as follows:</p> <p>“6.5.6 If the <i>Contractor</i> is delayed in the performance of the <i>Work</i> by an act or omission of the <i>Contractor</i> or anyone directly or indirectly employed or engaged by the <i>Contractor</i>, or by any cause within the <i>Contractor's</i> control, then (i) firstly, at its expense, and to the extent possible, the <i>Contractor</i> shall accelerate the work and/or provide overtime work to recover time lost by a delay arising under this paragraph 6.5.6, and (ii) secondly, where it is not possible for the <i>Contractor</i> to recover the time lost by implementing acceleration measures and/or overtime work, the <i>Contract Time</i> may be extended for such reasonable time as the <i>Owner</i> may decide in consultation with the <i>Consultant</i> and the <i>Contractor</i>. The <i>Owner</i> shall be reimbursed by the <i>Contractor</i> for all reasonable costs incurred by the <i>Owner</i> as the result of such delay, including, but not limited to, <i>Owner's</i> staff costs, the cost of all additional services required by the <i>Owner</i> from the <i>Consultant</i> or any sub-consultants, project managers, or others employed or engaged by the <i>Owner</i>, and in particular, the costs of the <i>Consultant's</i> services during the period between the date of <i>Substantial Performance of the Work</i> stated in Article A-1 herein, as the same may be extended through the provision of these General Conditions, and any later or actual date of <i>Substantial Performance of the Work</i> achieved by the <i>Contractor</i>.</p> <p>6.5.7 Without limiting the obligations of the <i>Contractor</i> described in GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS or GC 9.4 – CONSTRUCTION SAFETY, the <i>Owner</i> or <i>Consultant</i> may, by <i>Notice in Writing</i>, direct the <i>Contractor</i> to stop the <i>Work</i> where the <i>Owner</i> or <i>Consultant</i> determines that there is an imminent risk to the safety of persons or property at the <i>Place of the Work</i>. In the event that the <i>Contractor</i> receives such notice, it shall immediately stop the <i>Work</i> and secure the site. The <i>Contractor</i> shall not be entitled to an extension of the <i>Contract Time</i> or to an increase in the <i>Contract Price</i> unless the resulting delay, if any, would entitle the <i>Contractor</i> to an extension of the <i>Contact Time</i> or the reimbursement of the <i>Contractor's</i> costs as provided in paragraphs 6.5.1, 6.5.2 or 6.5.3.</p>

		6.5.8 No claim for delay shall be made by the <i>Contractor</i> and the <i>Contract Time</i> shall not be extended due to climatic conditions or arising from the <i>Contractor's</i> efforts to maintain the <i>Construction Schedule</i> ."
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PART 7 DEFAULT NOTICE

SC40 GC 7.1

OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

SC40.1	7.1.2	In GC 7.1.2, <u>delete</u> the words "and if the <i>Consultant</i> has given a written statement to the <i>Owner</i> and <i>Contractor</i> which provides the detail of such neglect to perform the <i>Work</i> properly or such failure to comply with the requirements of the <i>Contract</i> to a substantial degree".
SC40.2	7.1.3.4	<u>Add</u> a new subparagraph 7.1.3.4 as follows: ".4 an "acceptable schedule" as referred to in subparagraph 7.1.3.2. means a schedule approved by the <i>Consultant</i> and the <i>Owner</i> wherein the default can be corrected within the balance of the <i>Contract Time</i> and shall not cause delay to any other aspect of the <i>Work</i> or the work of other contractors, and in no event shall it be deemed to give a right to extend the <i>Contract Time</i> ."
SC40.3	7.1.4.1	<u>Delete</u> subparagraph 7.1.4.1 and <u>replace</u> it with the following: ".1 correct such default and deduct the cost, including <i>Owner's</i> expenses, thereof from any payment then or thereafter due the <i>Contractor</i> ."
SC40.4	7.1.4.2	<u>Delete</u> subparagraph 7.1.4.2 and <u>replace</u> it with the following: ".2 by providing <i>Notice in Writing</i> to the <i>Contractor</i> , terminate the <i>Contractor's</i> right to continue with the <i>Work</i> in whole or in part or terminate the <i>Contract</i> , and publish a notice of termination (Form 8) in accordance with the <i>Act</i> ."
SC40.5	7.1.5.3	In subparagraph 7.1.5.3 <u>delete</u> the words: "however, if such cost of finishing the <i>Work</i> is less than the unpaid balance of the <i>Contract Price</i> , the <i>Owner</i> shall pay the <i>Contractor</i> the difference"
SC40.6	7.1.6 to 7.1.10	<u>Delete</u> GC 7.1.6 and <u>replace</u> it with new paragraphs 7.1.6, 7.1.7, 7.1.8, 7.1.9 and 7.1.10 as follows: "7.1.6 In addition to its right to terminate the <i>Contract</i> set out herein, the <i>Owner</i> may terminate this <i>Contract</i> at any time for any other reason and without cause upon giving the <i>Contractor</i> fifteen (15) <i>Working Days Notice in Writing</i> to that effect. In such event, the <i>Contractor</i> shall be entitled to be paid for all <i>Work</i> performed including reasonable profit, for loss sustained upon <i>Products</i> and <i>Construction Equipment</i> , and such other damages as the <i>Contractor</i> may have sustained as a result of the termination of the <i>Contract</i> , but in no event shall the <i>Contractor</i> be entitled to be compensated for any loss of profit on unperformed portions of the <i>Work</i> , or indirect, special, or consequential damages incurred. 7.1.7 The <i>Owner</i> may suspend <i>Work</i> under this <i>Contract</i> at any time for any reason and without cause upon giving the <i>Contractor Notice in Writing</i> to that effect. In such event, the <i>Contractor</i> shall be entitled to be paid for all <i>Work</i> performed to the date of suspension and be compensated for all actual costs incurred arising from the suspension, including reasonable profit, for loss sustained upon <i>Products</i> and <i>Construction Equipment</i> , and such other damages as the <i>Contractor</i> may have sustained as a result of the suspension of the <i>Work</i> , but in no event shall the <i>Contractor</i> be entitled to be compensated for any indirect, special, or consequential damages incurred. In the event that the suspension continues for more than thirty (30) calendar days, the <i>Contract</i> shall be deemed to be terminated and the provisions of paragraph 7.1.6 shall apply.

		<p>7.1.8 In the case of either a termination of the <i>Contract</i> or a suspension of the <i>Work</i> under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the <i>Contractor</i> shall use its best commercial efforts to mitigate the financial consequences to the <i>Owner</i> arising out of the termination or suspension, as the case may be.</p> <p>7.1.9 Upon the resumption of the <i>Work</i> following a suspension under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the <i>Contractor</i> will endeavour to minimize the delay and financial consequences arising out of the suspension.</p> <p>7.1.10 The <i>Contractor's</i> obligations under the <i>Contract</i> as to quality, correction, and warranty of the <i>Work</i> performed by the <i>Contractor</i> up to the time of termination or suspension shall continue after such termination of the <i>Contract</i> or suspension of the <i>Work</i>."</p>
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SC41 GC 7.2

CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT

SC41.1	7.2.2	<p><u>Delete</u> paragraph 7.2.2 and <u>replace</u> it with the following:</p> <p>"7.2.2 If the <i>Work</i> is suspended or otherwise delayed for a period of 40 consecutive <i>Working Days</i> or more under a stop work order issued by a court or other public authority on account of a breach, violation, contravention, or a failure to abide by any laws, ordinances, rules, regulations, or codes directly by the <i>Owner</i>, the <i>Owner's</i> other contractor(s), or the <i>Consultant</i>, and relating to the <i>Work</i> or the <i>Place of the Work</i>, the <i>Contractor</i> may, without prejudice to any other right or remedy the <i>Contractor</i> may have, terminate the <i>Contract</i> by giving the <i>Owner</i> Notice in <i>Writing</i> to that effect."</p>
SC41.2	7.2.3.1	<u>Delete</u> subparagraph 7.2.3.1 in its entirety.
SC41.3	7.2.3.2	<u>Delete</u> subparagraph 7.2.3.2 in its entirety.
SC41.4	7.2.3.4	In subparagraph 7.2.3.4, <u>delete</u> the words "except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER".
SC41.5	7.2.5	<p><u>Delete</u> paragraph 7.2.5 and <u>replace</u> it with the following:</p> <p>"7.2.5 If the default cannot be corrected within the 5 <i>Working Days</i> specified in paragraph 7.2.4, the <i>Owner</i> shall be deemed to have cured the default if it:</p> <ul style="list-style-type: none"> .1 commences correction of the default within the specified time; .2 provides the <i>Contractor</i> with an acceptable schedule for such correction; and, .3 completes the correction in accordance with such schedule."
SC41.6	7.2.6 to 7.2.9	<p><u>Add</u> new paragraphs 7.2.6, 7.2.7, 7.2.8 and 7.2.9 as follows:</p> <p>"7.2.6 If the <i>Contractor</i> terminates the <i>Contract</i> under the conditions described in GC 7.2 – CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the <i>Contractor</i> shall be entitled to be paid for all <i>Work</i> performed to the date of termination, as determined by the <i>Consultant</i>. The <i>Contractor</i> shall also be</p>

		<p>entitled to recover the direct costs associated with termination, including the costs of demobilization and losses sustained on <i>Products</i> and <i>Construction Equipment</i>. The <i>Contractor</i> shall not be entitled to any recovery for any special, indirect or consequential losses, including loss of profit.</p> <p>7.2.7 The <i>Contractor</i> shall not be entitled to give notice of the <i>Owner's</i> default or terminate the <i>Contract</i> in the event the <i>Owner</i> withholds certificates or payment or both in accordance with the <i>Contract</i> because of:</p> <p>.1 the <i>Contractor's</i> failure to pay all legitimate claims promptly, or</p> <p>.2 the failure of the <i>Contractor</i> to discharge construction liens which are registered against the title to the <i>Place of the Work</i>.</p> <p>7.2.8 The <i>Contractor's</i> obligations under the <i>Contract</i> as to quality, correction and warranty of the <i>Work</i> performed by the <i>Contractor</i> up to the effective date of termination shall continue in force and shall survive termination of this <i>Contract</i> by the <i>Contractor</i>.</p> <p>7.2.9 If the <i>Contractor</i> suspends the <i>Work</i> or terminates the <i>Contract</i> as provided for in GC 7.2 – CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the <i>Contractor</i> shall ensure the site and the <i>Work</i> are left in a safe, secure condition as required by authorities having jurisdiction at the <i>Place of the Work</i> and the <i>Contract Documents</i>."</p>
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PART 8 DISPUTE RESOLUTION

SC42 GC 8.1 AUTHORITY OF THE CONSULTANT

SC42.1	8.1.3	<p><u>Delete</u> paragraph 8.1.3 in its entirety and <u>substitute</u> as follows:</p> <p>"8.1.3 If a dispute is not resolved promptly, the <i>Consultant</i> will give such instruction as in the <i>Consultant's</i> opinion are necessary for the proper performance of the <i>Work</i> and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by doing so neither party will jeopardize any claim the party may have."</p>
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SC43 GC 8.2 ADJUDICATION

SC43.13	8.2.2 to 8.2.7	<p><u>Add</u> new GC 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.6, and 8.2.7 as follows:</p> <p>"8.2.2 Save and except where the <i>Contractor</i> has given an undertaking, in accordance with the <i>Act</i>, to refer a dispute to <i>Adjudication</i>, prior to delivering a notice of <i>Adjudication</i> in a form prescribed by the <i>Act</i>, the parties agree to first address all disputes with at least one in-person meeting with the <i>Owner's</i> representative, the <i>Consultant's</i> representative, and the <i>Contractor's</i> representative. The parties agree that such steps will be taken to resolve any disputes in a timely and cost-effective manner.</p> <p>8.2.3 Notwithstanding any other provisions in PART 8 DISPUTE RESOLUTION, the parties shall engage in <i>Adjudication</i> proceedings as required by, and in accordance with, the <i>Construction Act</i>.</p> <p>8.2.4 The following procedures shall apply to any <i>Adjudication</i> the parties engage in under the <i>Construction Act</i>:</p>
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		<p>.1 any hearings shall be held at a venue within the jurisdiction of the <i>Place of the Work</i> or such other venue as the parties may agree and which is acceptable to the adjudicator;</p> <p>.2 the <i>Adjudication</i> shall be conducted in English;</p> <p>.3 each party may be represented by counsel throughout an <i>Adjudication</i>;</p> <p>.4 there shall not be any oral communications with respect to issues in dispute that are the subject of an <i>Adjudication</i> between a party and the adjudicator unless it is made in the presence of both parties or their legal representatives; and</p> <p>.5 a copy of all written communications between the adjudicator and a party shall be given to the other party at the same time.</p> <p>8.2.5 Any documents or information disclosed by the parties during an <i>Adjudication</i> are confidential and the parties shall not use such documents or information for any purpose other than the <i>Adjudication</i> in which they are disclosed and shall not disclose such documents and information to any third party, unless otherwise required by law, save and except the for the adjudicator.</p> <p>8.2.6 If the <i>Contractor</i> fails to comply with any of the notice requirements set out in the <i>Contract</i>, including the time limits set out in any of the following:</p> <p>.1 GC 6.4 – CONCEALED OR UNKNOWN CONDITIONS;</p> <p>.2 GC 6.5 – DELAYS;</p> <p>.3 GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE;</p> <p>.4 PART 8 DISPUTE RESOLUTION</p> <p>.5 GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES</p> <p>.6 GC 9.3 – ARTIFACTS AND FOSSILS; or</p> <p>.7 GC 9.5 - MOULD</p> <p>in respect of any claim or dispute, the <i>Contractor</i> shall have no entitlement whatsoever (including to an increase in the <i>Contract Price</i>, or an extension of <i>Contract Time</i>) in the context of an <i>Adjudication</i> under the <i>Construction Act</i> and waives the right to make any such claims or disputes in an <i>Adjudication</i>. This GC 8.2.6 shall operate conclusively as an estoppel and bar in the event such claims or disputes are brought in an <i>Adjudication</i> and the <i>Owner</i> may rely on this GC 8.2.6 as a complete defence to any such claims or disputes.</p> <p>8.2.7 The parties hereby acknowledge and agree,</p> <p>.1 that counterclaims, claims of set-off or the exercise or use of other contractual rights that permit the <i>Owner</i> to withhold, deduct or retain from monies otherwise owed to the <i>Contractor</i> under the <i>Contract</i> may be referred to, and included as part of, <i>Adjudications</i> under the <i>Construction Act</i>;</p> <p>.2 that disputes related to the termination or abandonment of the <i>Contract</i>, as well as any disputes that arise or are advanced following the termination or abandonment of the <i>Contract</i>, shall not be referred to <i>Adjudication</i> under the <i>Construction Act</i>;</p> <p>.3 that notice(s) of <i>Adjudication</i>, with respect to any dispute or claim relating to the <i>Project</i>, shall not be given, and no <i>Adjudication</i> shall be commenced following <i>Contract</i> completion, <i>Contract</i> abandonment, or termination of the <i>Contract</i>;</p> <p>.4 that any <i>Adjudication</i> between the <i>Contractor</i> and a <i>Subcontractor</i> or a supplier that relates to an <i>Adjudication</i> between the <i>Owner</i> and the <i>Contractor</i> shall be joined together to be adjudicated by a single adjudicator, provided that the adjudicator agrees to do so, and the <i>Contractor</i> shall include a provision in each of its contracts that contain an equivalent obligation to this GC 8.2.7.4; and</p>
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		<p>.5 that, other than where the <i>Contractor</i> is obliged to commence an <i>Adjudication</i> pursuant to an undertaking under the <i>Construction Act</i>, neither the <i>Owner</i> nor the <i>Contractor</i> shall commence an <i>Adjudication</i> during the <i>Restricted Period</i>.</p> <p>8.2.8 The parties acknowledge and agree that no <i>Adjudication</i>, arbitration, action, suit or other proceeding may be brought by the <i>Contractor</i> against the <i>Owner</i> in respect of a claim for an increase to the <i>Contract Price</i> as set out in GC 6.6, before the <i>Consultant</i> has issued its findings in respect of same, pursuant to GC 6.6.5. For greater clarity and without limiting the foregoing, the amount applied for in each <i>Proper Invoice</i> shall not include any amounts pertaining to the <i>Contractor's</i> claim for an increase in <i>Contract Price</i> unless and until the <i>Consultant</i> has issued a written notice to the <i>Contractor</i> regarding the validity of such claim, as provided for in GC 6.6.5. However, nothing in this GC 8.2.8 shall prevent a <i>Contractor</i> from commencing an <i>Adjudication</i> where, pursuant to the <i>Construction Act</i>, the <i>Contractor</i> is required to give an undertaking to a <i>Subcontractor</i> to commence an <i>Adjudication</i> following delivery of a <i>Notice of Non-Payment</i>."</p>
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SC44 GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

SC44.1	8.3.1	<u>Amend</u> paragraph 8.3.1 by changing part of the second line from "shall appoint a <i>Project Mediator</i> " to "may appoint a <i>Project Mediator</i> , except that such an appointment shall only be made if both the <i>Owner</i> and the <i>Contractor</i> agree."
SC44.2	8.3.4	<u>Amend</u> paragraph 8.3.4 by changing part of the second line from "the parties shall request the <i>Project Mediator</i> " to "and subject to paragraph 8.3.1 the parties may request the <i>Project Mediator</i> ".
SC44.3	8.3.6 to 8.3.9	<p><u>Delete</u> paragraphs 8.3.6, 8.3.7 and 8.3.8 in their entirety and <u>replace</u> them with the following new GCs 8.3.6, 8.3.7, 8.3.8, and 8.3.9:</p> <p>"8.3.6 The dispute may be finally resolved by arbitration under the Rules for Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing, provided that both the <i>Contractor</i> and the <i>Owner</i> agree. If the <i>Contractor</i> and the <i>Owner</i> agree to resolve the dispute by arbitration, the arbitration shall be conducted in the jurisdiction of the <i>Place of the Work</i>.</p> <p>8.3.7 Prior to delivering a notice of <i>Adjudication</i> in a form prescribed by the <i>Act</i>, the parties agree to first address all disputes by attending at least one meeting with the <i>Owner's</i> representative, the <i>Consultant's</i> representative, and the <i>Contractor's</i> representative, prior to commencing an <i>Adjudication</i>. The parties agree that such steps will be taken to resolve any disputes in a timely and cost effective manner. If a resolution to the dispute(s) is not made at such a meeting, any party who plans to commence an <i>Adjudication</i> shall provide the other party with 5 <i>Working Days' Notice in Writing</i> of its intention to issue a notice of <i>Adjudication</i>.</p> <p>8.3.8 Other than where the <i>Contractor</i> is obliged to commence an <i>Adjudication</i> pursuant to an undertaking under the <i>Construction Act</i>, neither the <i>Owner</i> nor the <i>Contractor</i> shall commence an <i>Adjudication</i> during the <i>Restricted Period</i>.</p> <p>8.3.9 Where either party has delivered a notice of <i>Adjudication</i> in a form prescribed by the <i>Act</i>, the procedures and rules set out under the <i>Construction Act</i> and the regulations thereto shall govern the <i>Adjudication</i>."</p>

PART 9 PROTECTION OF PERSONS AND PROPERTY

SC45 GC 9.1 PROTECTION OF WORK AND PROPERTY

SC45.1	9.1.1.1	<u>Delete</u> subparagraph 9.1.1.1 in its entirety and <u>substitute</u> the following: “.1 errors in the <i>Contract Documents</i> which the <i>Contractor</i> could not have discovered applying the standard of care described in paragraph 3.14.1;”
SC45.2	9.1.2	<u>Delete</u> paragraph 9.1.2 in its entirety and <u>substitute</u> as follows: “9.1.2 Before commencing any <i>Work</i> , the <i>Contractor</i> shall determine the locations of all underground or hidden utilities and structures indicated in or inferable from the <i>Contract Documents</i> , or that are inferable from an inspection of the <i>Place of the Work</i> exercising the degree of care and skill described in paragraph 3.14.1.”
SC45.3	9.1.5	<u>Add</u> new paragraph 9.1.5 as follows: “9.1.5 With respect to any damage to which paragraphs 9.1.3 or 9.1.4 apply, the <i>Contractor</i> shall neither undertake to repair or replace any damage whatsoever to the work of other contractors, or to adjoining property, nor acknowledge that the same was caused or occasioned by the <i>Contractor</i> , without first consulting the <i>Owner</i> and receiving written instructions as to the course of action to be followed from either the <i>Owner</i> or the <i>Consultant</i> . Where, however, there is danger to life, the environment, or public safety, the <i>Contractor</i> shall take such emergency action as it deems necessary to remove the danger.”

SC46 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

SC46.1	9.2.1	Amend GC 9.2.1 by <u>inserting</u> the following to the end of the paragraph: “For the purposes of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES, <i>Excess Soil</i> shall not be considered a ‘toxic and hazardous substance’.”
SC46.2	9.2.5.5	Add a new subparagraph 9.2.5.5 as follows: “.5 in addition to the steps described in subparagraph 9.2.5.3, take any further steps it deems necessary to mitigate or stabilize any conditions resulting from encountering toxic or hazardous substances or materials.”
SC46.3	9.2.6	<u>Amend</u> GC 9.2.6 by <u>adding</u> the following words after the word “responsible” in the second line: “or whether any toxic or hazardous substances or materials already at the <i>Place of the Work</i> (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the <i>Contractor</i> or anyone for whom the <i>Contractor</i> 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 damages to the property of the <i>Owner</i> or others,”.
SC46.4	9.2.8	<u>Amend</u> GC 9.2.8 by <u>adding</u> the following words after the word “responsible” in the second line: “or whether any toxic or hazardous substances or materials already at the <i>Place of the Work</i> (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the <i>Contractor</i> or anyone for whom the <i>Contractor</i> 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 damages to the property of the <i>Owner</i> or others,”.
SC46.5	9.2.10	<u>Add</u> new paragraph 9.2.10 as follows:

		<p>"9.2.10 The <i>Contractor</i>, <i>Subcontractors</i> and <i>Suppliers</i> shall not bring on to the <i>Place of the Work</i> any toxic or hazardous substances and materials except as required in order to perform the <i>Work</i>. If such toxic or hazardous substances or materials are required, storage in quantities sufficient to allow work to proceed to the end of any current work week only shall be permitted. All such toxic and hazardous materials and substances shall be handled and disposed of only in accordance with all laws and regulations that are applicable at the <i>Place of the Work</i>."</p>
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SC47 GC 9.4 CONSTRUCTION SAFETY

SC47.1	9.4.1	<p><u>Delete</u> GC 9.4.1 in its entirety and <u>replace</u> it with the following:</p> <p>"9.4.1 The <i>Contractor</i> shall be solely responsible for construction safety at the <i>Place of the Work</i> and for compliance with the rules, regulations, and practices required by the <i>OHS</i>A, including, but not limited to those of the "constructor", and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the <i>Work</i>. The <i>Contractor's</i> health and safety program documentation shall be made available for review by the <i>Owner</i> or <i>Consultant</i> immediately upon request. Without limiting the foregoing, the <i>Contractor</i> shall be solely responsible for construction safety in respect of the <i>Consultant</i>, <i>Subcontractors</i> and <i>Suppliers</i>, the <i>Owner's</i> own forces, <i>Other Contractors</i>, and all persons attending the <i>Place of the Work</i> during the course of the <i>Project</i>."</p>
SC47.2	9.4.2	<p>Amend GC 9.4.2 by <u>adding</u> the following words after "and the <i>Contractor</i>": ", <i>Subcontractors</i> and <i>Suppliers</i>".</p>
SC47.3	9.4.3	<p>Amend GC 9.4.3 by <u>adding</u> the following words after "and the <i>Contractor</i>": ", <i>Subcontractors</i> and <i>Suppliers</i>".</p>
SC47.4	9.4.4	<p><u>Delete</u> GC 9.4.4 and replace it with the following:</p> <p>"9.4.4 The <i>Owner</i> undertakes to include in its contracts with other contractors and in its instructions to its own forces the requirement that the other contractor or its own forces, as the case may be, comply with the policies and procedures of and the directions and instructions from the <i>Contractor</i> with respect to occupational health and safety and related matters."</p>
SC47.5	9.4.5	<p><u>Delete</u> GC 9.4.5 in its entirety and <u>replace</u> it with the following:</p> <p>"9.4.5 Prior to the commencement of the <i>Work</i>, the <i>Contractor</i> shall submit to the <i>Owner</i>:</p> <ul style="list-style-type: none"> .1 a current WSIB clearance certificate; .2 copies of the <i>Contractor's</i> insurance policies having application to the <i>Project</i> or certificates of insurance, at the option of the <i>Owner</i>; .3 documentation setting out the <i>Contractor's</i> in-house safety programs; .4 a copy of the Notice of Project filed with the Ministry of Labour naming itself as "constructor" under the <i>OHS</i>A; and .5 copies of any documentation or notices to be filed or delivered to the authorities having jurisdiction for the regulation of occupational health and safety at the <i>Place of the Work</i>;"

SC47.6	9.4.6 to 9.4.12	<p><u>Add</u> new GC 9.4.6, 9.4.7, 9.4.8, 9.4.9, 9.4.10, 9.4.11, and 9.4.12 as follows:</p> <p>“9.4.6 The <i>Contractor</i> shall indemnify and save harmless the <i>Owner</i>, its agents, trustees, officers, directors, employees, consultants, successors, appointees, and assigns from and against the consequences of any and all safety infractions committed by the <i>Contractor</i> under <i>OHSA</i> and any other occupational health and safety legislation in force at the <i>Place of the Work</i> including the payment of legal fees and disbursements on a solicitor and client basis. Such indemnity shall apply to the extent to which the <i>Owner</i> is not covered by insurance.</p> <p>9.4.7 If the <i>Owner</i> is of the reasonable opinion that the <i>Contractor</i> has not taken such precautions as are necessary to ensure compliance with the requirements of paragraph 9.4.1, the <i>Owner</i> may take any remedial measures which it deems necessary, including stopping the performance of all or any portion of the <i>Work</i>, and the <i>Owner</i> may use its employees, the <i>Contractor</i>, any <i>Subcontractor</i> or any other contractors to perform such remedial measures.</p> <p>9.4.8 The <i>Contractor</i> shall file any notices or any similar document required pursuant to the <i>Contract</i> or the safety regulations in force at the <i>Place of the Work</i>. This duty of the <i>Contractor</i> will be considered to be included in the <i>Work</i> and no separate payment therefore will be made to the <i>Contractor</i>.</p> <p>9.4.9 Unless otherwise provided in the <i>Contract Documents</i>, the <i>Contractor</i> shall develop, maintain and supervise for the duration of the <i>Work</i> a comprehensive safety program that will effectively incorporate and implement all required safety precautions. The program shall, at a minimum, respond fully to the applicable safety regulations and general construction practices for the safety of persons or property, including, without limitation, any general safety rules and regulations of the <i>Owner</i> and any workers' compensation or occupational health and safety statutes or regulations in force at the <i>Place of the Work</i>.</p> <p>9.4.10 The <i>Contractor</i> shall provide a copy of the safety program described in GC 9.4.9 hereof to the <i>Consultant</i> for delivery to the <i>Owner</i> prior to the commencement of the <i>Work</i>, and shall, ensure, as far as it is reasonably practical to do so, that every employer and worker performing work in respect of the <i>Project</i> complies with such program.</p> <p>9.4.11 The <i>Contractor</i> shall arrange regular safety meetings, and shall supply and maintain, at its own expense, at its office or other well-known place at the job site, safety equipment necessary to protect the workers and general public against accident or injury as prescribed by the authorities having jurisdiction at the <i>Place of the Work</i>, including, without limitation, articles necessary for administering first-aid to any person and an emergency procedure for the immediate removal of any injured person to a hospital or a doctor's care.</p> <p>9.4.12 The <i>Contractor</i> shall promptly report in writing to the <i>Owner</i> and the <i>Consultant</i> all accidents of any sort arising out of or in connection with the performance of the <i>Work</i>, whether on or adjacent to the job site, giving full details and statement of witnesses. If death or serious injuries or damages are caused, the accident shall be promptly reported by the <i>Contractor</i> to the <i>Owner</i> and the <i>Consultant</i> by telephone or messenger in addition to any reporting required under the applicable safety regulations.”</p>
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PART 10 GOVERNING REGULATIONS

SC48 GC 10.1 TAXES AND DUTIES

SC48.1	10.1.2	<u>Amend</u> paragraph 10.1.2 by <u>adding</u> the following sentence to the end of the paragraph:
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		"For greater certainty, the <i>Contractor</i> shall not be entitled to any mark-up for overhead or profit on any increase in such taxes and duties and the <i>Owner</i> shall not be entitled to any credit relating to mark-up for overhead or profit on any decrease in such taxes. The <i>Contractor</i> shall provide a detailed breakdown of <u>Additional</u> taxes if requested by the <i>Owner</i> in a form satisfactory to the <i>Owner</i> ."
SC48.2	10.1.3	<p><u>Add</u> new paragraph 10.1.3 as follows:</p> <p>"10.1.3 Where the <i>Owner</i> is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or <i>Value Added Taxes</i> applicable to the <i>Contract</i>, the <i>Contractor</i> shall, at the request of the <i>Owner</i>, assist with the application for any exemption, recovery or refund of all such taxes and duties and all amounts recovered or exemptions obtained shall be for the sole benefit of the <i>Owner</i>. The <i>Contractor</i> agrees to endorse over to the <i>Owner</i> any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this paragraph."</p>

SC49 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

SC49.1	10.2.5	<p><u>Amend</u> paragraph 10.2.5 by <u>adding</u> the words "Subject to paragraph 3.4" at the beginning of the paragraph.</p> <p>-and-</p> <p><u>Add</u> the following to the end of the second sentence:</p> <p>"...and no further <i>Work</i> on the affected components of the <i>Contract</i> shall proceed until these directives have been obtained by the <i>Contractor</i> from the <i>Consultant</i>."</p>
SC49.2	10.2.6	<p><u>Amend</u> paragraph 10.2.6 by <u>adding</u> the following sentence to the end of the paragraph:</p> <p>"In the event the <i>Owner</i> suffers loss or damage as a result of the <i>Contractor's</i> failure to comply with paragraph 10.2.5 and notwithstanding any limitations described in paragraph 12.1.1, the <i>Contractor</i> agrees to indemnify and to hold harmless the <i>Owner</i> and the <i>Consultant</i> from and against any claims, demands, losses, costs, damages, actions suits or proceedings resulting from such failure by the <i>Contractor</i>."</p>
SC49.3	10.2.7	<p><u>Amend</u> paragraph 10.2.7 by inserting the words "which changes were not, or could not have reasonably been, known to the <i>Owner</i> or to the <i>Contractor</i>, as applicable, at the time of bid closing, did not arise as a result of a public emergency or other <i>Force Majeure</i> event, and are not related to changes in duties, tariffs, or other import costs," to the second line, after the words "authorities having jurisdiction".</p>
SC49.4	10.2.8	<p><u>Add</u> new paragraph 10.2.8 as follows:</p> <p>"10.2.8 The <i>Contractor</i> shall furnish all certificates that are required or given by the appropriate governmental authorities as evidence that the <i>Work</i> as installed conforms with the laws and regulations of authorities having jurisdiction, including certificates of compliance for the <i>Owner's</i> occupancy or partial occupancy. The certificates are to be final certificates giving complete clearance of the <i>Work</i>, in the event that such governmental authorities furnish such certificates."</p>

SC50 GC 10.4 WORKERS' COMPENSATION

SC50.1	10.4.1	<p><u>Delete</u> paragraph 10.4.1 and <u>replace</u> with the following:</p> <p>"10.4.1 Prior to commencing the <i>Work</i>, and with each and every application for payment thereafter, including the <i>Contractor's</i> application for payment of the holdback amount following <i>Substantial Performance of the Work</i> and again with the</p>
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		<i>Contractor's</i> application for final payment, the <i>Contractor</i> shall provide evidence of compliance with workers' compensation legislation in force at the <i>Place of the Work</i> , including payments due thereunder."
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SC51 GC 11.1 INSURANCE

SC51.1	11.1	<p><u>Delete</u> entirety of GC 11.1 and <u>replace</u> with the following:</p> <p>"GC 11.1 INSURANCE</p> <p>11.1.1 Without restricting the generality of GC 12 – INDEMNIFICATION, the <i>Contractor</i> shall provide, maintain, and pay for the insurance coverages specified in GC 11.1 – INSURANCE. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the <i>Work</i> until the expiration of the warranty periods set out in the <i>Contract Documents</i>. Prior to commencement of the <i>Work</i> and upon the placement, renewal, <u>amendment</u>, or extension of all or any part of the insurance, the <i>Contractor</i> shall promptly provide the <i>Owner</i> 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 <u>amending</u> endorsements.</p> <p>.1 General Liability Insurance</p> <p>General liability insurance shall be in the name of the <i>Contractor</i>, with the <i>Owner</i> and the <i>Consultant</i> named as <u>Additional</u> insureds, with limits of not less than \$10,000,000.00 inclusive per occurrence for bodily injury, death, and damage to property, including loss of use thereof, for itself and each of its employees, <i>Subcontractors</i> and/or agents. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent <u>replacement</u>, provided that IBC Form 2100 shall contain the latest edition of the relevant CCDC endorsement form. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of <i>Ready-for-Takeover</i>, as set out in the certificate of <i>Ready-for-Takeover</i>, on an ongoing basis for a period of 6 years following <i>Ready-for-Takeover</i>. Where the <i>Contractor</i> maintains a single, blanket policy, the <u>Addition</u> of the <i>Owner</i> and the <i>Consultant</i> is limited to liability arising out of the <i>Project</i> and all operations necessary or incidental thereto. The policy shall be endorsed to provide the <i>Owner</i> with not less than 30 days' notice, in writing, in advance of any cancellation and of change or <u>amendment</u> restricting coverage.</p> <p>.2 Automobile Liability Insurance</p> <p>Automobile liability insurance in respect of licensed vehicles shall limits of not less than \$5,000,000.00 inclusive per occurrence for bodily injury, death and damage to property, covering all licensed vehicles <i>owned</i> or leased by the <i>Contractor</i>, and endorsed to provide the <i>Owner</i> with not less than 30 days' notice, in writing, in advance of any cancellation, change or <u>amendment</u> restricting coverage. Where the policy has been issued pursuant to a government-operated automobile insurance system, the <i>Contractor</i> shall provide the <i>Owner</i> with confirmation of automobile insurance coverage for all automobiles registered in the name of the <i>Contractor</i>.</p> <p>.3 Aircraft and Watercraft Liability Insurance</p>
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		<p>Where determined necessary by the <i>Contractor</i>, acting reasonably, aircraft and watercraft liability insurance will be obtained in accordance with the provisions of paragraph 11.1.3. 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 <i>Work</i>, including use of <u>Additional</u> premises, shall be subject to limits of not less than \$2,000,000.00 inclusive per occurrence for bodily injury, death and damage to property, including loss of use thereof and limits of not less than \$2,000,000.00 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the <i>Owner</i>. The policies shall be endorsed to provide the <i>Owner</i> with not less than 30 days' notice, in writing, in advance of cancellation, change or <u>amendment</u> restricting coverage.</p> <p>.4 Property and Boiler and Machinery Insurance</p> <p>(1) Builder's Risk property insurance shall be in the name of the <i>Contractor</i> with the <i>Owner</i> and the <i>Consultant</i> named as <u>Additional</u> insureds. The policy shall insure against all risks of direct physical loss or damage to the property insured which shall include all property included in the <i>Work</i>, whether owned by the <i>Contractor</i> or the owner or owned by others, so long as the property forms part of the <i>Work</i>. The property insured also includes all materials and supplies necessary to complete the work, whether installed in the work temporarily or permanently, in storage on the project site, or in transit to the project site, as well as temporary buildings, scaffolding, falsework forms, hoardings, excavation, site preparation and similar work. The insurance shall be for not less than the sum of the amount of the contract price and the full value of products that are specified to be provided by the owner for incorporation into the work, if applicable, with the deductible of \$10,000.00 payable by the contractor. The insurance shall include the foregoing and, otherwise, shall not be less than the insurance required by IBC Form 4042 or its equivalent <u>replacement</u> provided that the IBC Form 4042 shall include the latest <u>Addition</u> of the relevant CCDC endorsement form. The coverage shall be based on a completed value form and shall be maintained continuously until ten (10) days after the date of the final certificate of payment.</p> <p>(2) Boiler and machinery insurance shall be in the name of the <i>Contractor</i>, with the <i>Owner</i> and the <i>Consultant</i> named as <u>Additional</u> insureds, for not less than the <u>replacement</u> value of the boilers, pressure vessels and other insurable objects forming part of the <i>Work</i>. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 10 days after the date of the final certificate for payment.</p> <p>(3) The policies shall allow for partial or total use or occupancy of the <i>Work</i>.</p> <p>(4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the <i>Owner</i> and the <i>Contractor</i> as their respective interests may appear. The <i>Contractor</i> shall act on behalf of the <i>Owner</i> 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 <i>Contractor</i> shall proceed to restore the <i>Work</i>. Loss or damage shall not affect the rights and obligations of either party under the <i>Contract</i> except that the <i>Contractor</i> shall be entitled to such reasonable extension of the <i>Contract Time</i>, relative to the extent of the loss or damage, as determined by the <i>Owner</i>, in its sole discretion.</p> <p>(5) The <i>Contractor</i> shall be entitled to receive from the <i>Owner</i>, in <u>Addition</u> to the amount due under the <i>Contract</i>, the amount at which the <i>Owner's</i> interest in restoration of the <i>Work</i> has been appraised, such amount to be paid as the restoration of the <i>Work</i> proceeds and as provided in GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 – PROGRESS PAYMENT. In <u>Addition</u>, the <i>Contractor</i> shall be entitled to receive from the payments made by the insurer the amount of the <i>Contractor's</i> interest in the restoration of the <i>Work</i>.</p>
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		<p>(6) In the case of loss or damage to the <i>Work</i> arising from the work of other contractors, or the <i>Owner's</i> own forces, the <i>Owner</i>, in accordance with the <i>Owner's</i> obligations under paragraph 3.2.2.4 of GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the <i>Contractor</i> the cost of restoring the <i>Work</i> as the restoration of the <i>Work</i> proceeds and as provided in GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 – PROGRESS PAYMENT.</p> <p>.5 Contractors' Equipment Insurance</p> <p>"All risks" contractors' equipment insurance covering construction machinery and equipment used by the <i>Contractor</i> for the performance of the <i>Work</i>, excluding boiler insurance, shall be in a form acceptable to the <i>Owner</i> and shall not allow subrogation claims by the insurer against the <i>Owner</i>. The policies shall be endorsed to provide the <i>Owner</i> with not less than 30 days' notice, in writing, in advance of cancellation, change or <u>amendment</u> restricting coverage. Subject to satisfactory proof of financial capability by the <i>Contractor</i> for self-insurance of his equipment, the <i>Owner</i> agrees to waive the equipment insurance requirement.</p> <p>11.1.2 The <i>Contractor</i> shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the <i>Contractor's</i> responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.</p> <p>11.1.3 Where the full insurable value of the <i>Work</i> is substantially less than the <i>Contract Price</i>, the <i>Owner</i> may reduce the amount of insurance required to waive the course of construction insurance requirement.</p> <p>11.1.4 If the <i>Contractor</i> fails to provide or maintain insurance as required by the <i>Contract Documents</i>, then the <i>Owner</i> shall have the right to provide and maintain such insurance and provide evidence of same to the <i>Contractor</i>. The <i>Contractor</i> shall pay the costs thereof to the <i>Owner</i> on demand, or the <i>Owner</i> may deduct the amount that is due or may become due to the <i>Contractor</i>.</p> <p>11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the <i>Place of the Work</i>."</p>
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SC52 *NEW* GC 11.2 CONTRACT SECURITY

SC52.13	GC 11.2	<p><u>Add</u> new GC 11.2 – CONTRACT SECURITY as follows:</p> <p>"GC 11.2 CONTRACT SECURITY</p> <p>11.2.1 The <i>Contractor</i> shall, prior to the execution of the <i>Contract</i>, furnish a performance bond and labour and material payment bond which meets the requirements under paragraph 11.2.2.</p> <p>11.2.2 The performance bond and labour and material payment bond shall:</p> <ul style="list-style-type: none"> .1 be issued by a duly licensed surety company, which has been approved by the <i>Owner</i> and is permitted under the <i>Construction Act</i>, .2 be issued by an insurer licensed under the <i>Insurance Act</i> (Ontario) and authorized to transact a business of suretyship in the Province of Ontario; .3 shall be in the form prescribed by the <i>Construction Act</i>; .4 have a coverage limit of at least 50 per cent of the <i>Contract Price</i>, or such other percentage of the <i>Contract Price</i> as stated in the <i>Contract Documents</i>;
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		<p>.5 extends protection to <i>Subcontractors, Suppliers</i>, and any other persons supplying labour or materials to the <i>Project</i>; and</p> <p>.6 shall be maintained in good standing until the fulfillment of the <i>Contract</i>, including the warranty period set out in paragraph 12.3.1.</p> <p>11.2.3 It is the intention of the parties that the performance bond shall be applicable to all of the <i>Contractor's</i> obligations in the <i>Contract Document</i> and, wherever a performance bond is provided with language which conflicts with this intention, it shall be deemed to be amended to comply. The <i>Contractor</i> represents and warrants to the <i>Owner</i> that it has provided its surety with a copy of the <i>Contract Documents</i> prior to the issuance of such bonds.</p> <p>11.2.4 Without limiting the foregoing in any way, the bonds shall indemnify and hold harmless the <i>Owner</i> for and against costs and expenses (including legal and <i>Consultant</i> services and court costs) arising out of or as a consequence of any default of the <i>Contractor</i> under this <i>Contract</i>.</p> <p>11.2.4 The <i>Contractor</i> shall be responsible for notifying the surety company of any changes made to the <i>Contract</i> during the course of construction.</p> <p>11.2.5 The premiums for bonds required by the <i>Contract Documents</i> shall be included in the <i>Contract Price</i>.</p> <p>11.2.6 Should the <i>Owner</i> require additional bonds by the <i>Contractor</i> or any of his <i>Subcontractors</i>, after the receipt of bids for the <i>Work</i>, the <i>Contract Price</i> shall be increased by all direct costs attributable to providing such bonds. The <i>Contractor</i> shall promptly provide the <i>Owner</i>, through the <i>Consultant</i>, with any such bonds that may be required."</p>
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PART 12 OWNER TAKEOVER

SC53 GC 12.1 READY-FOR-TAKEOVER

SC53.1	12.1.1	<p><u>Delete</u> GC 12.1.1 in its entirety and <u>replace</u> it with the following:</p> <p>"12.1.1 <i>Ready-for-Takeover</i> shall be achieved when all of the following has occurred, as verified and approved by the <i>Owner</i>:</p> <p>.1 <i>Substantial Performance of the Work</i> has been achieved, as certified by the <i>Consultant</i>;</p> <p>.2 a permit for occupancy of the <i>Place of the Work</i> has been obtained from the authorities having jurisdiction;</p> <p>.3 the <i>Work</i> to be performed under the <i>Contract</i> has satisfied the requirements for deemed completion in accordance with Section 2(3) of the <i>Construction Act</i>;</p> <p>.4 final cleaning and waste removal, as required by the <i>Contract Documents</i>;</p> <p>.5 the <i>Contractor</i> has delivered to the <i>Consultant</i> and the <i>Owner</i> all inspection certificates from authorities having jurisdiction with respect to any component of the <i>Work</i> which has been completed;</p> <p>.6 subject only to GC 12.1.2, the entire <i>Work</i> has been completed to the requirements of the <i>Contract Documents</i>, including completion of all items on the punch list prepared at the time of <i>Substantial Performance of the Work</i> and the <i>Work</i> is being used for its intended purpose, and is so certified by the <i>Consultant</i>;</p>
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		<p>.7 subject only to GC 12.1.2, the <i>Contractor</i> has submitted to the <i>Owner</i> and the <i>Consultant</i> in a collated and organized matter, all <i>Close-Out Documentation</i> and any other materials or documentation required by the <i>Contract Documents</i>;</p> <p>.8 subject only to GC 12.1.2, all <i>Products</i>, systems and components of the <i>Project</i> have been commissioned and certified for operation and accepted by the <i>Owner</i> and <i>Consultant</i>, and</p> <p>9 subject only to GC 12.1.2, the <i>Contractor</i> has submitted to the <i>Owner</i> and the <i>Consultant</i> full and complete as-built drawings and <i>Specifications</i> revised by the <i>Contractor</i> to reflect the as-built state of the <i>Work</i>, clearly showing changes to the <i>Drawings</i> and <i>Specifications</i> from the original <i>Contract Documents</i>, all of which have been approved by the <i>Owner</i> acting reasonably."</p>
SC53.2	12.1.2	<p><u>Delete</u> GC 12.1.2 in its entirety and <u>replace</u> it with the following:</p> <p>"12.1.2 The <i>Owner</i> may, in its sole, absolute, and unfettered discretion, waive compliance with a requirement, or a part thereof, for achieving <i>Ready-for-Takeover</i> set out in GC 12.1.1.6 to 12.1.1.9 (inclusive). Where the <i>Owner</i> exercises the discretion afforded under this GC 12.1.2, the <i>Contractor</i> shall be required to comply with GC 5.5.1.2 as part of its application for final payment and the <i>Owner</i> and the <i>Contractor</i>, in consultation with the <i>Consultant</i>, shall establish a reasonable date for completing the <i>Work</i>."</p>
SC53.3	12.1.3	<p><u>Delete</u> GC 12.1.3 in its entirety and <u>replace</u> it with the following:</p> <p>"12.1.3 When the <i>Contractor</i> considers the <i>Work Ready-for-Takeover</i>, it shall submit a written application to the <i>Owner</i> and the <i>Consultant</i> for review."</p>
SC53.4	12.1.4	In GC 12.1.4, <u>delete</u> the words "list and" from the second line.
SC53.5	12.1.5	<p><u>Delete</u> GC 12.1.5 in its entirety and <u>replace</u> it with the following:</p> <p>"12.1.5 Following the confirmation of the date of <i>Ready-for-Takeover</i> by the <i>Consultant</i> and as confirmed by the <i>Owner</i>, the <i>Contractor</i> may submit a final application for payment in accordance with GC 5.5 – FINAL PAYMENT."</p>
SC53.6	12.1.6	<u>Delete</u> GC 12.1.6 in its entirety.

SC54 GC 12.2 EARLY OCCUPANCY

SC54.1	GC 12.2	<p><u>Delete</u> GC 12.2 – EARLY OCCUPANCY BY THE OWNER in its entirety, including all subparagraphs thereunder and <u>replace</u> it with the following:</p> <p>"12.2.1 The <i>Owner</i> reserves the right to take possession of and use for any intended purpose any portion or all of the undelivered portion of the <i>Project</i> even though the <i>Work</i> may not have reached Substantial Performance of the <i>Work</i>, provided that such taking possession and use will not unduly interfere, in any material way, with the progress of the <i>Work</i>. The taking of possession or use of any such portion of the <i>Project</i> shall not be deemed to be the <i>Owner's</i> acknowledgement or acceptance of the <i>Work</i> or <i>Project</i> nor shall it relieve the <i>Contractor</i> of any of its obligations under the <i>Contract</i>.</p> <p>12.2.2 Whether the <i>Project</i> contemplates <i>Work</i> by way of renovations in buildings which will be in use or be occupied during the course of the <i>Work</i> or where the <i>Project</i> involves <i>Work</i> that is adjacent to a structure which is in use or is occupied, the <i>Contractor</i>, without in any way limiting its responsibilities under this <i>Contract</i>, shall take all reasonable steps to avoid interference with fire exits, building access and</p>
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		egress, continuity of electric power and all other utilities, to suppress dust and noise and to avoid conditions likely to propagate mould or fungus of any kind and all other steps reasonably necessary to promote and maintain the safety and comfort of the users and occupants of such structures or adjacent structures.”
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SC55 GC 12.3 WARRANTY

SC55.1	12.3.2	<u>Delete</u> from the first line of paragraph 12.3.2 the word “The” and <u>replace</u> it with the words “Subject to GC 1.1.3, the...”
SC55.2	12.3.7 to 12.3.12	<p><u>Add</u> new paragraphs 12.3.7 to 12.3.12 as follows:</p> <p>“12.3.7 Where required by the <i>Contract Documents</i>, the <i>Contractor</i> shall provide a maintenance bond as security for the performance of the <i>Contractor’s</i> obligations as set out in GC 12.3 WARRANTY.</p> <p>12.3.8 The <i>Contractor</i> shall provide fully and properly completed and signed copies of all warranties and guarantees required by the <i>Contract Documents</i>, containing:</p> <ul style="list-style-type: none"> .1 the proper name of the <i>Owner</i>; .2 the proper name and address of the <i>Project</i>; .3 the date the warranty commences, which shall be at the “<i>Ready-for-Takeover</i>” unless otherwise agreed upon by the <i>Consultant</i> in writing. .4 a clear definition of what is being warranted and/or guaranteed as required by the <i>Contract Documents</i>; and .5 the signature and seal (if required by the governing law of the <i>Contract</i>) of the company issuing the warranty, countersigned by the <i>Contractor</i>. <p>12.3.9 Should any <i>Work</i> be repaired or replaced during the time period for which it is covered by the specified warranty, a new warranty shall be provided under the same conditions and for the same period as specified herein before. The new warranty shall commence at the completion of the repair or replacement.</p> <p>12.3.10 The <i>Contractor</i> shall ensure that its <i>Subcontractors</i> are bound to the requirements of GC 12.3 – WARRANTY for the <i>Subcontractor’s</i> portion of the <i>Work</i>.</p> <p>12.3.11 The <i>Contractor</i> shall ensure that all warranties, guarantees or other obligations for <i>Work</i>, services or <i>Products</i> performed or supplied by any <i>Subcontractor</i>, <i>Supplier</i> or other person in connection with the <i>Work</i> are obtained and available for the direct benefit of the <i>Owner</i>. In the alternative, the <i>Contractor</i> shall assign to the <i>Owner</i> all warranties, guarantees or other obligations for <i>Work</i>, services or <i>Products</i> performed or supplied by any <i>Subcontractor</i>, <i>Supplier</i> or other person in connection with the <i>Work</i> and such assignment shall be with the consent of the assigning party, where required by law, or by the terms of that party’s contract. Such assignment shall be in addition to, and shall in no way limit, the warranty rights of the <i>Owner</i> under the <i>Contract Documents</i>.</p> <p>12.3.12 The <i>Contractor</i> shall commence or correct any deficiency within 2 <i>Working Days</i> after receiving a <i>Notice in Writing</i> from the <i>Owner</i> or the <i>Consultant</i>, and shall complete the <i>Work</i> as expeditiously as possible, except in the case where the deficiency prevents maintaining security or where basic systems essential to the ongoing business of the <i>Owner</i> and/or its tenants cannot be maintained operational as designed. In those circumstances all necessary corrections and/or installations of temporary replacements shall be carried out immediately as an emergency service. Should the <i>Contractor</i> fail to provide this emergency service within 8 hours of a request being made during the normal business hours of the <i>Contractor</i>, the <i>Owner</i> is authorized, notwithstanding GC 3.1, to carry out all necessary repairs or replacements at the <i>Contractor’s</i> expense.”</p>

PART 13 INDEMNIFICATION AND WAIVER

SC56 GC 13.1 INDEMNIFICATION

SC56.1	GC 13.1	<p><u>Delete</u> GC 13.1 – INDEMNIFICATION in its entirety and <u>replace</u> it with the following:</p> <p>“13.1.1 The <i>Contractor</i> shall indemnify and hold harmless the <i>Owner</i>, its parent, subsidiaries and affiliates, their respective partners, trustees, officers, directors, agents and employees and the <i>Consultant</i> from and against any and all claims, liabilities, expenses, demands, losses, damages, actions, costs, suits, or proceedings (hereinafter called “claims”), whether in respect of claims suffered by the <i>Owner</i> or in respect of claims by third parties, that directly or indirectly arise out of, or are attributable to, the acts or omissions of the <i>Contractor</i>, its employees, agents, <i>Subcontractors</i>, <i>Suppliers</i> or any other persons for whom it is in law responsible (including, without limitation, claims that directly or indirectly arise out of, or are attributable to, loss of use or damage to the <i>Work</i>, the <i>Owner's</i> property or equipment, the <i>Contractor's</i> property or equipment or equipment or property adjacent to the <i>Place of the Work</i> or death or injury to the <i>Contractor's</i> personnel).</p> <p>13.1.2 The <i>Owner</i> shall indemnify and hold the <i>Contractor</i>, its agents and employees harmless from and against claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the <i>Contractor's</i> performance of the <i>Contract</i> which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the <i>Place of the Work</i>.</p> <p>13.1.3 The provisions of GC 13.1 - INDEMNIFICATION shall survive the termination of the <i>Contract</i>, howsoever caused and no payment or partial payment, no issuance of a final certificate of payment and no occupancy in whole or in part of the <i>Work</i> shall constitute a waiver or release of any of the provisions of GC 13.1</p> <p>13.1.4 Notwithstanding the provisions of GC1.1 - CONTRACT DOCUMENTS, GC 1.1.6, GC13.1 - INDEMNIFICATION shall govern over the provisions of GC 1.3.1 of GC1.3 – RIGHTS AND REMEDIES.”</p>
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SC57 GC 13.2 WAIVER OF CLAIMS

SC57.1	13.2.1	<p>In paragraph 13.2.1 in the third line after the word “limitation” <u>add</u> the words “claims for delay pursuant to GC 6.5 DELAYS”</p> <p>-and-</p> <p><u>add</u> the words “(collectively “Claims”)” after “<i>Ready-for-Takeover</i>” in the fourth line.</p>
SC57.2	13.2.1.1	<p>In subparagraph 13.2.1.1, in each instance change the word “claims” to “Claims” and change the word “claim” to “Claim”.</p>
SC57.3	13.2.1.2	<p>In subparagraph 13.2.1.2 change the word “claims” to “Claims”.</p>
SC57.4	13.2.1.3	<p><u>Delete</u> subparagraph 13.2.1.3 in its entirety.</p>
SC57.5	13.2.1.4	<p>In paragraph 13.2.1.4 change the word “claims” to “Claims”.</p>
SC57.6	13.2.2.1	<p>In paragraph 13.2.2.1 <u>delete</u> the words “in paragraphs 13.2.1.2 and 13.2.1.3” and <u>replace</u> them with “in paragraph 13.2.1.2”</p> <p>-and-</p> <p>change the word “claims” to “Claims” in both instances and change the word “claim” to “Claim”.</p>

SC57.7	13.2.3	<u>Delete</u> paragraph 13.2.3 in its entirety.
SC57.8	13.2.4	<u>Delete</u> paragraph 13.2.4 in its entirety.
SC57.9	13.2.5	<u>Delete</u> paragraph 13.2.5 in its entirety.
SC57.10	13.2.6	In paragraph 13.2.6 change the word “claim” to “Claim” in all instances in the paragraph.
SC57.11	13.2.8	In paragraph 13.2.8 change “The party” to “The <i>Contractor</i> ” -and- change the word “claim” to “Claim” in all instances in the paragraph.
SC57.12	13.2.9	In paragraph 13.2.9 <u>delete</u> the words “under paragraphs 13.2.1 or 13.2.3” and <u>replace</u> them with “under paragraph 13.2.1” -and- change both instances of the words “the party” to “the <i>Contractor</i> ”. Change the word “claim” to “Claim” in all instances in the paragraph.

SC58 *NEW* PART 14 OTHER PROVISIONS

SC58.13	14.1	<p><u>Add</u> new PART 14 – OTHER PROVISIONS as follows:</p> <p>“PART 14 OTHER PROVISIONS</p> <p>GC 14.1 OWNERSHIP OF MATERIALS</p> <p>14.1.1 Unless otherwise specified, all materials existing at the <i>Place of the Work</i> at the time of execution of the <i>Contract</i> shall remain the property of the <i>Owner</i>. All <i>Work</i> and <i>Products</i> delivered to the <i>Place of the Work</i> by the <i>Contractor</i> shall be the property of the <i>Owner</i>. The <i>Contractor</i> shall remove all surplus or rejected materials as its property when notified in writing to do so by the <i>Consultant</i>.”</p>
SC58.14	14.2	<p><u>Add</u> new GC 14.2 – CONSTRUCTION LIENS as follows:</p> <p>“GC 14.2 LIENS</p> <p>14.2.1 Notwithstanding any other provision in the <i>Contract</i>, the <i>Consultant</i> shall not be obligated to issue a certificate, and the <i>Owner</i> shall not be obligated to make payment, subject to the <i>Owner’s</i> requirement to issue a <i>Notice of Non-Payment</i> (Form 1.1) to the <i>Contractor</i>, if at the time such certificate or payment was otherwise due:</p> <p style="padding-left: 40px;">.1 a claim for lien has been registered against the <i>Project</i> lands by a <i>Subcontractor</i> or a <i>Supplier</i> that has not been vacated or discharged by the <i>Contractor</i> in accordance with the requirements of this <i>Contract</i>, or</p> <p style="padding-left: 40px;">.2 if the <i>Owner</i> or a mortgagee of the <i>Project</i> lands has received a written notice of a lien that has not been resolved by the <i>Contractor</i> through the posting of security or otherwise.</p> <p>14.2.2 In the event a construction lien arising from the performance of the <i>Work</i> is registered or preserved against the <i>Project</i> lands by a <i>Subcontractor</i> or a <i>Supplier</i>, or a written notice of a lien is given or a construction lien action is commenced</p>

		<p>against the <i>Owner</i> by a <i>Subcontractor</i> or a <i>Supplier</i>, then the <i>Contractor</i> shall, at its own expense:</p> <ol style="list-style-type: none">.1 within 10 calendar days of registration of the construction lien, vacate or discharge the lien from title to the premises (i.e. the <i>Place of the Work</i>). If the lien is merely vacated, the <i>Contractor</i> shall, if requested, undertake the <i>Owner's</i> defence of any subsequent action commenced in respect of the lien, at the <i>Contractor's</i> sole expense;.2 within 10 calendar days of receiving notice of a written notice of a lien, post security with the Ontario Superior Court of Justice so that the written notice of a lien no longer binds the parties upon whom it was served; and.3 satisfy all judgments and pay all costs arising from such construction liens and actions and fully indemnify the <i>Owner</i> against all costs and expenses arising from same, including legal costs on a full indemnity basis. <p>14.2.3 In the event that the <i>Contractor</i> fails or refuses to comply with its obligations pursuant to paragraph 14.2.2, the <i>Owner</i> shall, at its option, be entitled to take all steps necessary to address any such construction liens including, without limitation and in addition to the <i>Owner's</i> rights under paragraph 13.2.4, the posting of security with the Ontario Superior Court of Justice to vacate the claim for lien from title to the <i>Project</i> lands, and in so doing will be entitled to a full indemnity from the <i>Contractor</i> for all legal fees, security, disbursements and other costs incurred and will be entitled to deduct same from amounts otherwise owing to the <i>Contractor</i>.</p> <p>14.2.4 In the event that any <i>Subcontractor</i> or <i>Supplier</i> registers any claim for lien with respect to all or part of the <i>Place of Work</i>, the <i>Owner</i> shall have the right to withhold, in addition to the statutory holdback, the full amount of said claim for lien plus either: (a) \$250,000 if the claim for lien is in excess of \$1,000,000 or (b) 25% of the value of the claim for lien and to bring a motion to vacate the registration of said claim for lien and any associated certificate of action in respect of that lien, in accordance with Section 44 of the <i>Act</i>, by paying into court as security the amount withheld.</p> <p>14.2.5 Nothing in this GC 14.2 serves to preclude the <i>Contractor</i> from preserving and perfecting its lien in the event of non-payment by the <i>Owner</i>."</p>
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**APPENDIX 1
to the Supplementary Conditions**

Project-specific requirements for a “*Proper Invoice*”

To satisfy the requirements for a *Proper Invoice*, the following criteria, as may be applicable in each case, must be included with the *Contractor's* application for payment:

- .1 the written bill or request for payment must be in writing;
- .2 the *Contractor's* name and current address;
- .3 the *Contractor's* HST registration number;
- .4 the date the application for payment was prepared by the *Contractor*;
- .5 the period of time in which the services or materials were supplied to the *Owner*;
- .6 the purchase order number provided by the *Owner*;
- .7 reference to the provisions of the *Contract* under which payment is being sought (e.g. GC 5.3 –PAYMENTS for progress payments, GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK GC 5.5 – FINAL PAYMENT for final payment, etc.);
- .8 a description, including quantities where appropriate, of the services or materials, or a portion thereof, that were supplied and form the basis of the *Contractor's* request for payment;
- .9 the amount the *Contractor* is requesting to be paid by the *Owner*, set out in a statement based on the schedule of values approved under GC 5.2.4, separating out any statutory or other holdbacks, set-offs and HST;
- .10 a sworn Statutory Declaration in the form CCDC 9A-2018, only for second and subsequent progress payments;
- .11 a current Workplace Safety Insurance Board clearance certificate;
- .12 a pre-approved schedule of values, supplied by the *Contractor*, for Divisions 1 through 14 of the *Specifications* (or equivalent Construction Specifications Institute Masterformat) of the *Work*, aggregating the total amount of the *Contract Price*, including all supporting invoicing;
- .13 a separate pre-approved schedule of values, supplied by each *Subcontractor*, for each of Division 15, 16, and 17 of the *Specifications* (or equivalent Construction Specifications Institute Masterformat) of the *Work*, aggregating the total amount of the *Contract Price*, including all supporting invoicing;
- .14 invoices and other supporting documentation for all claims against the cash allowance;
- .15 a current, acceptable, and up to date *Construction Schedule Update*;
- .16 if requested by the *Owner*, a current and valid certificate(s) of insurance as required under GC 11.1 – INSURANCE;
- .17 the name, title, telephone number and mailing address of the person at the place of business of the *Contractor* to whom payment is to be directed;
- .18 a current, up to date, and approved *Shop Drawing* log;
- .19 in the case of the *Contractor's* application for final payment, in addition to the foregoing requirements (as applicable):

- (a) any *Close-Out Documentation*, together with complete and final as-built drawings;
- (b) the *Contractor's* written request for release of the deficiency holdback, including a statement that no written notices of lien have been received by it;
- (c) the *Contractor's* written certification that there are no outstanding claims, pending claims or future claims from the *Contractor* or their *Subcontractors* or *Suppliers*; and
- (d) sufficient evidence of the *Contractor's* compliance with GC 3.11.

END OF AMENDMENTS TO CCDC 2 - 2020

1 SUMMARY OF WORK

- .1 The project is:
 - .1 St Mary's Barrie Catholic School, window replacement. Site located at 340 Leacock Drive, Barrie, Ontario, L4N 6J8.
- .2 Work by Owner comprises the following:
 - .1 Installation of Owner equipment and furnishings unless otherwise indicated on the drawings and specifications.
- .3 The words 'by others' when used in the Specifications or on the Drawings shall not mean by someone other than the Trade Contractor. The only means by which something shown or specified shall be indicated as not being in the Contract is by the use of the initials 'NIC' or the words 'Not In (the) Contract' or 'By Owner'.
- .4 Construction Schedule:
 - .1 It is anticipated the construction scope of work will commence by July 2, 2025 or earlier with the expectation that Substantial Performance and Occupancy will be achieved by August 22, 2025. Academic activities at the school facility will commence September 2, 2025.

2 WORK RESTRICTIONS

- .1 Contractor's Use of Site
 - .1 Use of site is restricted to the areas designated on the drawings for execution of the Work. Do not unreasonably encumber site with materials or equipment. Move stored products or equipment which interfere with operations of Owner, or other contractors. Obtain and pay for use of off-site additional storage, or work areas as required by the Work.
- .2 Hours of Work
 - .1 Hours of work for this Contract are generally confined to regular daily business hours of 7:00am to 5:00pm, Monday to Friday. Where required by sequencing of the Work, portions of the Work may be required to be performed outside of regular daily business hours, or on weekends, but shall be performed at such times at no additional cost to the Owner.
 - .2 Once the building is occupied, Contractor access to the building to perform Work to Correct deficiencies or to perform warranty is restricted and work must be done after hours. School day start time is 7:00AM and end of day time is 4:00PM.

3 OFF SITE WORK

- .1 All work beyond property lines, adjacent to the site, is included in Contract unless noted otherwise.

4 EXISTING CONDITIONS

- .1 Information on designated substances and hazardous materials will be provided via addendum once the report is complete by Environmental Consultant.
- .2 The Contractor shall be responsible for conducting an on-site evaluation of conditions which can be observed and for correlation of these conditions

with the information included under this section.

- .3 Information contained in documents listed here may be used by the Contractor to assist in an assessment of existing conditions. Evaluation of the information shall remain the responsibility of the Contractor.

END OF SECTION

1 GENERAL

.1 Refer **General Conditions of Contract (CCDC2 – 2020) – GC 4.1 CASH ALLOWANCES.**

.2 Include all allowances listed below in the Bid Price.

.3 Expend Cash Allowances as directed by the Consultant.

.4 Each Cash Allowance will be adjusted to actual cost as defined hereunder and Contract Price will be amended accordingly by written order.

.5 Prepare Cash Allowance schedule jointly with Consultant and Owner to show when items called for under cash allowances must be authorized by Consultant for ordering purposes so that progress of Work will not be delayed.

.6 Progress payments for work and material authorized under Cash Allowances will be made in accordance with GC 5.3 of the contract.

.7 Only when the Total Value of the Cash Allowances is exceeded will the Contractor be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.

.8 Include progress payments on accounts of Work authorized under Cash Allowances in Consultant's monthly certificate for payment in accordance with the Conditions of the Contract (CCDC 2 – 2020).

.9 Prepare schedule jointly with Consultant and Contractor to show when items called for under cash allowances must be authorized by Consultant for ordering purposes so that progress of Work will not be delayed

2 MATERIAL ALLOWANCES (SUPPLY ONLY)

.1 Material cash allowance shall include and provide payment for:

.1 Net cost of material.

.2 Applicable duties and taxes.

.3 Delivery to the Place of the Work.

.4 Handling at the Place of the Work, including unloading, uncrating, storage and hoisting.

.5 Protection from damage by elements or otherwise.

.6 Overhead and profit.

.2 Include in the Bid Price, in addition to the material cash allowance, costs for the following:

.1 Labour for installation and finishing.

.2 Other expenses required to complete installation.

.3 Overhead and Profit.

3 ASSEMBLY ALLOWANCES (SUPPLY AND INSTALL)

.1 Assembly cash allowance shall include and provide payment for:

.1 Net cost of material.

.2 Applicable duties and taxes.

.3 Delivery to the Place of the Work.

.4 Handling at the Place of Work, including unloading, uncrating, storage and hoisting.

- .5 Protection from damage by elements or otherwise.
- .6 Labour installation and finishing.
- .7 Other expenses to complete installation.
- .8 Overhead and profit.

- .2 Include in the Bid Price any overhead and profit or related General Contractor costs.

4 ALLOWANCE AMOUNTS

- .1 The Total Cash Allowance to be included in the Stipulated Price is Twenty Thousand Dollars (\$20,000.00) in Canadian funds.
- .2 The Cash Allowance shall cover the following (in general):
 - .1 Roller Window Shades – supply and installation of all window coverings.
- .3 **Unexpended amounts of Cash Allowances may be reallocated to other work at the sole discretion of the Consultant and Owner.**

END OF SECTION

1 CHANGES IN THE WORK

- .1 Change to the work not involving an adjustment in Contract Price or Contract Time and Cash Allowance authorizations will be done through a Supplemental (Site) Instruction: as issued by the Consultant, consistent with the intent of the Contract Documents.
- .2 Changes to the work involving an adjustment in Contract Price or Contract Time shall be in accordance with **the General Conditions of the Contract (CCDC 2 - 2020) GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES**

END OF SECTION

1 APPLICATIONS FOR PAYMENT

- .1 Applications for payment on account shall be made in accordance with the **General Conditions of the Contract (CCDC 2 - 2020) PART 5 PAYMENT.**
- .2 The second and all subsequent applications for payment shall include a statement based on the Schedule of Values and a standard Workers Compensation Certificate of Clearance.

2 SCHEDULE OF VALUES

- .1 Submit Schedule of Values in spreadsheet form acceptable to the Consultant.
- .2 Identify on each Schedule of Values, the following information:
 - .1 Date of Issue
 - .2 Project name
 - .3 Owner's name
 - .4 Contractor's name
 - .5 Payment period
 - .6 Payment certificate number
- .3 Items of work listed shall include, but not be limited to, separate line items for the following:
 - .1 General Accounts
 - .2 Mobilization
 - .3 Supervision
 - .4 Bonds and Insurance
 - .5 Permits and Licenses
 - .6 Operations and Maintenance Manuals/As-Built Drawings
 - .7 All trades or portions of the Work, generally in chronological order
 - .8 Provision of other Products and/or services
 - .9 Cash Allowance expenditures
 - .10 Changes in the Work
- .4 The total Contract amount for each trade or portion of the Work shall be listed beside each item.
- .5 For the purposes of monthly payments, the following values shall be assigned for Operation and Maintenance Manuals and Contractor created Redline and Final electronic As-Built Drawings.
 - .1 Architectural Maintenance Manuals: \$2500.00
 - .2 Architectural Redline As-Built Drawings: \$2500.00
- .6 The Values of the Work shall be listed as to the aggregate percentage and dollar value completed, under the following major headings:
 - .1 Initial Contract Amounts for each line item
 - .2 Progress to Date,
 - .3 Percent Complete,
 - .4 Current Holdback Applied,
 - .5 Current Invoice less Holdback
 - .6 Current Invoice,
 - .7 Previous Billings,
 - .8 Contract Balance

- .7 Work shall be sub-totaled under original Contract amounts, Cash Allowance expenditures, and Changes to the Work.
- .8 Final totals shall identify:
 - .1 Total amount
 - .2 Holdback deducted
 - .3 Holdback released
 - .4 Amount invoiced to date
 - .5 Net amount
 - .6 HST
 - .7 Amount due this Certificate

END OF SECTION

1 PROJECT MANAGEMENT & COORDINATION

.1 Project Coordination

- .1 The Contractor is responsible for the overall coordination of the Work. Coordinate the work of all subcontractors, and provide such assistance as is necessary, including but not limited to;
 - .1 Providing site dimensions and layout,
 - .2 Providing temporary facilities and controls,
 - .3 Scheduling subcontractors work to prevent conflicts,
 - .4 Scheduling and administering regular sub-trade scheduling and coordination meetings throughout progress of the Work.
 - .5 Scheduling and administering regular sub-trade safety meetings throughout progress of the Work.
 - .6 Coordinate construction sequences and schedules including all components of the Work, including all Divisions with interdependent responsibilities.
- .2 The Contractor shall provide and facilitate production of interference drawings for coordination of the Work. Provide such interference drawings to the Consultant for review.

.2 Project Supervision

- .1 Provide full time supervision in accordance with **General Conditions of Contract (CCDC 2 - 2020) GC 3.5 SUPERVISION.**
- .2 Supervision shall be provided until Total Completion is achieved and the deficiencies have been completed or otherwise agreed with the Owner.
- .3 The supervisor shall be responsible for the overall day-to-day coordination on site between all subcontractors, and provide such assistance as is necessary, including but not limited to;
 - .1 Layout,
 - .2 Rough carpentry work for blocking, strapping, nailers, etc.

.3 Project Meetings

- .1 Attend all regular bi-weekly project progress meetings throughout progress of work.
- .2 Consultant shall chair regular bi-weekly project progress meetings and shall record and distribute same to Owner, Contractor and Sub-consultants. Contractor shall forward to appropriate subcontractors.
- .3 The Contractor shall be called upon to report on progress of the work at each bi-weekly progress meeting. At a minimum, they shall submit within 2 day prior to the meeting, written documentation with status of the following:
 - .1 2 week review of work completed
 - .2 2 week look ahead schedule for work upcoming
 - .3 Shop Drawings and Submittals Log
 - .4 RFI and RFCO status logs
 - .5 PCN and CO status logs

- .4 The Contractor shall chair separate Sub-Trade bi-weekly project progress

meetings between the Contractor and all Sub-trades, and shall record and distribute same to Owner, and Consultants.

.4 Project Site Administration

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

- .1 Contract drawings.
- .2 Project manual.
- .3 Addenda and Bid Revisions.
- .4 Reviewed shop drawings.
- .5 Change orders and other Contract modifications.
- .6 Field test and inspection reports.
- .7 Approved schedules.
- .8 Manufacturer's installation and application instructions.

1 SCHEDULES

.1 Construction Progress Schedule.

.1 Provide construction schedule in accordance with the **General Conditions of the Contract (CCDC 2 - 2020) GC 3.4 – CONSTRUCTION SCHEDULE**. Schedule must utilize "critical path" method.

.2 Indicate separate line for each trade or operation of the Work. Arrange trades in chronological order for commencement of that part of the Work. Critical Path work to be clearly identified.

.3 Identify projected major milestones in the course of the Work such as:

- .1 Completion of demolition
- .2 Completion of each major finish item
- .3 Building closing in
- .4 Required testing
- .5 Substantial Performance
- .6 Final Cleaning
- .7 Owner set-up
- .8 Deficiency Correction, etc.
- .9 Completion of each major portion work not listed above that impacts critical path.

.2 Submittal Schedule

.1 Provide schedule for submittal of all Shop Drawings, Product Data and Samples.

.2 Provide complete list of all manufactured products to be used in the course of the Work, including those amended by addenda.

.3 Submission of Schedules

.1 Submit one copy of each schedule to the Consultant for review, prior to first progress billing. Amend schedule as required.

.2 Submit 4 copies of each subsequent issue of schedules to the Consultant.

.3 Update schedule on a regular basis or as requested by the Consultant.

2 SUBMITTAL PROCEDURES

- .1 Submit to Consultant, all items specified for review, with reasonable promptness and in orderly sequence so as to not cause delay in the Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 The Contractor shall schedule a minimum of 10 working days in order for the Consultants to review each submission. This shall also apply to subsequent resubmissions.
- .3 Do not proceed with work affected by the submittal until review is complete.
- .4 Review all submittals prior to submission to the Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the Work and the Contract Documents. Submittals not stamped, signed, and dated by the Contractor will be returned without review.
- .5 Verify field measurements and affected adjacent work are coordinated.
- .6 Contractor's responsibility for errors and omissions in submission, or deviations from requirements of Contract Documents, is not relieved by Consultant's review of submittals.
- .7 Keep one reviewed copy of each submission on site.
- .8 Shop Drawings
 - .1 Refer **General Conditions of the Contract (CCDC 2 - 2020) GC 3.8 SHOP DRAWINGS**.
 - .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of the Section under which the adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
 - .3 Adjustments made on shop drawings by the Consultant are not intended to change the Contract Price. If adjustments affect the value of the Work, the Contractor shall state such in writing to the Consultant within five (5) business days of receipt of the reviewed shop drawings. The Contractor shall not proceed with the Work requiring adjustment in price without prior approval by the Consultant. The Owner will not be responsible for any resulting delays in construction because of delayed notice.
 - .4 Make changes to shop drawings as the Consultant may require, consistent with Contract Documents. When resubmitting, notify the Consultant in writing of any revisions other than those requested. Any work completed for adjustments without Consultant prior approval is at the Contractor's expense and as such, the Owner will not be subject to

increased costs to the contract.

- .5 Shop drawings shall be submitted electronically wherever possible. Files shall be in PDF format only.
- .6 Shop drawings submitted by FAX, or as copies of FAX transmissions are not acceptable as shop drawings, and will not be reviewed.
- .7 Reproductions of Consultants' drawings are not acceptable for the purpose of creating Shop Drawings. Any drawings submitted for review which contain drawings or any parts of drawings produced by the Consultant, will be rejected. The Owner will not take responsibility for any resulting delays in construction as a result of the above.
- .8 Shop drawings not submitted in the scale type of the contract documents (ie; metric for metric drawings) will not be reviewed.
- .9 **Product Data Sheets**
 - .1 Manufacturer's standard schematics, catalogue sheets, diagrams, schedules, performance charts, illustrations and other descriptive data are acceptable in lieu of shop drawings, where specified.
 - .2 Product Data Sheets are acceptable provided they conform to the following:
 - .1 Information not applicable to project has been deleted.
 - .2 Supplement standard information to provide additional information applicable to project.
 - .3 Show dimensions and clearances required.
 - .4 Show performance characteristics and capacities.
 - .5 Show wiring diagrams, when requested, and controls.
 - .3 Submit product data sheets or brochures for requirements requested in specification Sections and as the Consultant may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.
 - .4 Submit Product Data Sheets.
 - .5 Product data sheets submitted by FAX, or as copies of FAX transmissions will not be accepted.
- .10 **Return of Submissions**
 - .1 If shop drawings or data sheets are rejected, noted copy will be returned and resubmission of corrected shop drawings or data sheets through the same procedure indicated above, shall be performed before fabrication and installation of Work may proceed.
- .11 **Samples**
 - .1 Submit samples for review, in duplicate, in sizes requested in respective specification sections. Label samples as to origin and intended use in the Work.
 - .2 Where colour, pattern or texture is criteria, submit full range of samples.

- .3 Deliver samples prepaid to Consultant's office.
- .4 Notify the Consultant in writing, at the time of submission of deviations in samples from requirements of Contract Documents.
- .5 Adjustments made on samples by the Consultant are not intended to change the Contract Price. If adjustments affect the value of the Work, the Contractor shall state such in writing to the Consultant within five (5) business days of receipt of the reviewed shop drawings. The Contractor shall not proceed with the Work requiring adjustment in price without prior approval by the Consultant. The Owner will not be responsible for any resulting delays in construction because of delayed notice. Any work completed for adjustments without Consultant prior approval is at the Contractor's expense and as such, the Owner will not be subject to increased costs to the contract.
- .6 Make changes in samples, which the Consultant may require, consistent with Contract Documents.
- .7 Reviewed samples or mock-ups will become standards of workmanship and material against which installed work will be checked on project.
- .12 Submission Requirements
 - .1 Accompany submissions with transmittal letter containing:
 - .1 Date,
 - .2 Project title and number,
 - .3 Contractor's name and address,
 - .4 Drawing/page numbers of each shop drawing or data sheet,
 - .5 Identification (ie. "Structural Steel Shop Dwgs."), and
 - .6 Number of copies submitted.
 - .2 Submissions shall include (where applicable) :
 - .1 Date and revision date,
 - .2 Project title and number,
 - .3 Name of Contractor, Subcontractor(s), Supplier/Manufacturer,
 - .4 Identification of product or material,
 - .5 Relation to adjacent structure or materials,
 - .6 Field dimensions, clearly identified as such,
 - .7 Reference standards (CSA, CGSB, ASTM, etc.), and
 - .8 Contractor's stamp, initialed or signed, certifying review of submission, and verification of field measurements.
- .13 Distribution of Submittals after Review
 - .1 Distribute copies of shop drawings and product data which carry Consultant's stamp as follows (where applicable):
 - .1 Job site file (Record documents),
 - .2 General Contractor's office,
 - .3 Subcontractors, and
 - .4 Suppliers or Fabricators.

END OF SECTION

- 1 GENERAL
 - .1 Provide construction photographs in accordance with procedures and submission requirements specified in this section.
 - .2 Photographs shall be taken using a digital camera.
 - .3 Photographs shall be named and grouped by date using the following file name format: **St Mary's Barrie Catholic_School_P00801** - YYYY_MM_DD (##).jpeg
- 2 PROGRESS PHOTOGRAPHS
 - .1 Provide 1 digital set of construction photographs, documenting progress of the Work. Submit one digital set with each monthly progress draw.
 - .2 Submit progress photographs with each monthly progress draw, and at the following milestones;
 - .1 Completion of excavation and pouring of footings, including founding elevation of underside of footing excavation.
 - .2 Completion of foundations prior to backfilling.
 - .3 Completion of structural frame.
 - .4 Completion of rough-in of mechanical and electrical services before concealment.
 - .5 Completion of roofing membrane.
 - .6 Completion of each major portion of Work.
 - .7 Completion of each major finish item.
 - .3 Orientation of Photographs: provide photos from a minimum of 4 general viewpoints, as well as specific views as required by milestones specified above, and as determined by Consultant prior to first Progress Draw.
- 3 FINAL PHOTOGRAPHS
 - .1 Submit full digital set of construction photographs taken during course of Work with Operations & Maintenance Manuals at the completion of the project.
 - .2 Orientation of Photographs: provide final photos as follows:
 - .1 General viewpoints as defined above,
 - .2 Views of all exterior elevations,
 - .3 One view from each street,
 - .4 Views of site showing parking areas and play surfaces,
 - .5 Interior views of all major spaces,
 - .6 One set of views of a typical room,
 - .7 Specific views as determined by Consultant (Max. 48 views).

END OF SECTION

1 GENERAL

1.1 SECTION INCLUDES

- .1 Requirements for quality of work.
- .2 Requirements for material inspection and testing.
- .3 Requirements for determination of defective materials and work.

1.2 REFERENCE STANDARDS

- .1 CSA A23.1; Concrete Materials and Methods of Concrete Construction.
- .2 CSA A23.2; Methods of Test for Concrete.
- .3 CSA S16.1; Limit States Design of Steel Structures.
- .4 CSA W47.1; Certification of Companies for Fusion Welding of Steel Structures.
- .5 CSA W59; Welded Steel Construction (Metal Arc Welding).
- .6 CISC; Code of Standard Practice for Structural Steel.
- .7 OPSS; Ontario Provincial Standard Specifications.

1.3 REGULATORY REQUIREMENTS

- .1 Products and services provided to complete the Work shall meet or exceed requirements of specified standards, municipal by-laws, building codes and referenced documents.

1.4 INDEPENDENT INSPECTION AND TESTING

- .1 Independent Inspection and Testing Consultants will be engaged by the Owner for the purpose of inspecting and/or testing individual portions of the Work. The initial cost of such services will be borne by the Owner.

1.5 RESPONSIBILITIES

- .1 Inspection and Testing Consultants
 - .1 Inspection and Testing Consultants shall;
 - .1 Provide inspection and testing specified,
 - .2 Inform the Contractor, Consultant and Owner upon observance of materials, systems, or procedures not in compliance with the specifications, and
 - .3 Submit complete reports to the Contractor, Consultant and Owner in a timely manner.
- .2 Contractor
 - .1 Contractor shall:
 - .1 Provide access to the Work for Inspection/Testing Consultants, and
 - .2 Inform the Inspection/Testing Consultants in advance of day and time required for inspection and tests.
 - .2 It is the responsibility of the General Contractor to ensure the quality control requirements of the Contract are implemented.
 - .3 Costs for any additional inspections resulting from contractor's failure to correct deficient work in previous inspections will be borne by the General Contractor.
- .4 Consultant
 - .1 The Consultant will make final decisions on changes to the scope of work of inspection and testing that may affect the Contract Price.

- .2 When informed of any material procedure or test result that does not meet or exceed the specifications, the Consultant will respond to resolve the issue.

1.6 ACCESS TO WORK

- .1 Allow inspection & testing company's access to the Work, as well as off-site manufacturing and fabrication plants.

1.7 REPORTS

- .1 Submit three copies of inspection and test reports to the Consultant.
- .2 Provide copies to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.
- .3 Submit one copy of inspection and test reports to the Building Official having jurisdiction, where required by that official.
- .4 The cost of tests beyond those called for in the Contract Documents or beyond those required by the law of the Place of Work shall be appraised by the Consultant and may be authorized as recoverable at the discretion of the Consultant and agreed by the Owner.

1.8 AIR/VAPOUR BARRIERS

- .1 All building envelope air/vapour barrier components shall be subject to inspection and testing as specified herein. Inspection and Testing shall include:
 - .1 Visual inspection of all transition membranes.

2 PRODUCTS

(RESERVED)

3 EXECUTION

3.1 INSPECTION AND TESTING - GENERAL

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

3.2 INSPECTION AND TESTING - PROCEDURES

- .1 Notify the appropriate agency and Consultant in advance of the requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store, cure and inspect test samples.

3.3 QUALITY OF THE WORK

- .1 Quality of the Work shall be first class, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required work is such as to make it impractical to produce

required results.

- .2 Do not employ any unfit person or anyone unskilled in their required duties. The Consultant reserves the right to require the dismissal from the site, of workers deemed incompetent, careless, insubordinate or otherwise objectionable.

3.4 DEFECTIVE MATERIALS AND WORK

- .1 **Refer to General Conditions of Contract GC 2.4 of CCDC 2-2020.**
- .2 Where evidence exists that defective work has occurred, or that work has been carried out incorporating defective products, the Consultant may have independent tests, inspections, or surveys performed in order to determine if work is defective. Tests, inspections, or surveys carried out under these circumstances will be provided at the Contractor's expense in the event of defective work. Where tests incorporate a number of samples, payment will be assessed, by the Consultant, based on the ratio of conforming to non-conforming results. This does not include re-testing of soil compaction during placement, unless where evidence exists that failure to meet required compaction is because of non-conformance with the Contract documents or by negligence of the contractor.

END OF SECTION

1 GENERAL

1 SECTION INCLUDES

- .1 Codes and Standards.
- .2 Authority Having Jurisdiction.
- .3 Health and Safety Guidelines for Work in Occupied Buildings.
- .4 Permits and Fees.
- .5 Relics, Antiquities and Human Remains.

2 CODES AND STANDARDS

- .1 Codes
 - .1 All construction shall conform to the Ontario Building Code, the National Building Code (NBC) and the National Fire Code (NFC) latest editions including all supplements and amendments.
 - .2 Conform to all other codes, by-laws and regulations as specified within individual sections of the specifications.
- .2 Industry Standards
 - .1 Industry Standards are specified within individual sections as applicable to those portions of the Work. The latest editions of all industry standards shall be the standards for which quality of work shall be assessed.
 - .2 Comply with all relevant codes, standards and industry-accepted practices, as specified herein, or as applicable to the Work.

3 AUTHORITIES HAVING JURISDICTION

- .1 The Chief Building Official of the Municipality of the Place of the Work, is the primary Authority Having Jurisdiction for compliance with all codes, by-laws and regulations as they apply to all construction.
- .2 Other Authorities Having Jurisdiction may be required to review and approve certain portions of the Work. The Chief Building Official of the Municipality of the Place of the Work, will determine the requirements for such involvement.

4 HEALTH AND SAFETY GUIDELINES FOR WORK IN OCCUPIED BUILDINGS

- .1 In addition to all Occupational Health and Safety Act and Regulations for Construction Projects (2000) (Ontario Regulation 213/91, amended by Reg. 631/94, & Reg. 145/00) and by all authorities having jurisdiction, when applicable the Contractor shall conform with requirements of Section 01 41 10 - SMCDSB Health and Safety Guidelines for Work in Occupied Buildings.

5 PERMITS AND FEES

- .1 The Contractor is responsible for applying for, and obtaining all necessary permits, licenses, or certificates required by the Work.
- .2 Authorities Having Jurisdiction may levy fees for issuing permits, licenses, or certificates under their jurisdiction. The Contractor shall pay all such fees as required, and shall include the cost of such fees in their Contract Price.
- .3 Furnish certificates and permits from other Authorities Having Jurisdiction when

so requested by the Consultant.

6 RELICS, ANTIQUITIES AND HUMAN REMAINS

- .1 Comply with the General Conditions of the Contract with respect to relics, antiquities, and human remains.
- .2 Isolate and protect human remains, relics, antiquities, items of historical, archeological or scientific interest such as cornerstones, commemorative plaques, inscribed tablets and other similar objects found during the course of the Work.
- .3 If such items are discovered in the course of construction, stop work in the immediate vicinity and give immediate notice to the Consultant as to the nature of the discovery, and await written instructions before proceeding with work in the area.
- .4 Resume work only after the conclusion of any inspection and evaluation by experts engaged by the Owner, and only after being given permission to do so.
- .5 Relics, antiquities and items of historical or specific interest remain the Owner's property.

END OF SECTION

Note: the health and safety guidelines in this section are applicable additional requirements of the contract when construction is occurring in school building during the occupied time of the full week preceding Labour Day weekend to the end of the first full week in July.

1 WORK SITE LOCATION

- .1 Hours of operations for the construction in unoccupied areas may occur during the regular work week hours with the following exception, odor based construction activities such as; painting, rubber base, carpet, epoxy flooring etc shall be limited to Fridays from 4pm to Saturday at 12 midnight. (This allows for a 36-hour time period for off gassing.)
- .2 Hours of operations for occupied areas requiring access through the occupied areas may only occur from 4pm to 7am Monday to Friday and 4pm Friday to 7am Monday with the following exception, odor based construction activities such as; painting, rubber base, carpet, epoxy flooring etc shall be limited to Fridays from 4pm to Saturday at 12 midnight. (This allows for a 36-hour time period for off gassing.)
- .3 Work during school hours must be approved by the appropriate Board Authority and the School Principal / designate. All construction and maintenance activities shall be confined to the areas of the school under construction. Fire exits shall be maintained at all times and physical barriers will be used to isolate the construction work from school staff and students.
- .4 The contractor must co-operate and co-ordinate all construction activities, which may interfere with the school, with the school Principal / designate. All noise related construction activities that would affect the staff and students' abilities to properly concentrate on school related activities is to be limited to 4pm to 8am daily.
- .5 It is the responsibility of the Contractor to clearly demark the work site borders and areas not to be used by usual occupants of the building or grounds. The Contractor must at all times erect and maintain adequate fencing or barriers around all excavations, pits, and in other places of danger.
- .6 The Contractor must be responsible for all sub-trades, including payment of the same, necessary to produce a complete installation.
- .7 Power and water may be available from the site where approved, but these facilities shall not be altered for the Contractor's use.
- .8 The Contractor shall obtain approval from the Capital Projects Officer for location of temporary buildings, temporary office, storage sheds and workshops as required by the work throughout the period of construction. The contractor must remove temporary buildings upon completion of the work and restore the property to the condition as found on commencement of the work.
- .9 The Contractor and their employee(s) must be aware of the location of the school's Health & Safety Board containing the following information: Designated Substance Reports, MSDS Sheets and general Health & Safety information. The contractor must provide a First Aid Kit and the name of the Safety Representative and stretcher for use by contractor employees.

- .10 The Contractor must not use school property as an office, for the purpose of hiring staff or conducting business or personal affairs on any project.
- 2. **COMMUNICATION**
 - .1 The Site Supervisor and Principal / designate shall have communication meetings at the start of each day for the purpose to review the construction activities planned for that day.
 - .2 The Board's Capital Projects Officer will follow-up with the Principal / designate regularly to review the communication between the Site Supervisor and the Principal / designate and to review construction activities.
 - .3 The Principal / designate will communicate work activities to the school staff and students as required.
 - .4 The Principal / designate is the single point of contact for reporting of Health and Safety incidences from staff. Upon receipt of notification of an incidence the Principal / designate shall perform an investigation with the School Health & Safety Representative. Following the investigation, the Principal / designate and the School Health and Safety Representative will decide either to evacuate or relocate staff and students from the area of concern. Following this, the Principal / designate will report the findings to the contractor's site supervisor and the Board's Capital Projects Officer. If the belief is that, there is an immediate danger to the Health and Safety of staff and students the Principal / designate may direct the contractor's site supervisor to terminate construction activities until such time that all parties believe the workplace is safe. The reporting structure to the Board is as follows, the Principal / designate shall report directly to the Board's Capital Projects Officer who will in turn report the incidence to the Board's Health and Safety Officer. If the Board's Capital Projects Officer is not reachable the Principal / designate is to contact the Assistant to the Controller of Planning & Facilities at extension 351. From this point the Board's Capital Projects Officer or the Assistant Manager of Facilities Services will be notified of the incidence.
- 3. **SCHOOL USE OF FACILITIES**
 - .1 The school regular hours of operations are from 7am to 4pm Monday to Friday.
 - .2 The school is encouraged to hold off any after-hours use of facilities adjacent to the area of work until completion of the construction contract. That said it is understood that the school needs to continue to provide activities beyond the regular school day and thus after-hours school use of facilities in the building will be permitted from Monday to Thursday. The school must be aware and accept that after-hours use may be interrupted by construction activities.
 - .3 The Principal / designate will communicate after hours use of facilities activities to the Contractor's site supervisor at the communication meetings described in 2.1 of 2. COMMUNICATION. It is anticipated that the Contractor will co-operate with the school to make the facilities available and safe for the use of extra-curricular activities such as sports tournaments, school dances, school productions etc.
 - .4 Staff are encouraged to work from home for after-hours work until completion of the construction contract.

- .5 External Groups are not permitted to use the facilities after hours until completion of the construction contract.
- 4. OPERATION OF VEHICLES ON BOARD PROPERTY
 - .1 Prior written approval must be obtained from the School Principal / designate when bringing vehicles on to school property during schools hours. Trucks and all other vehicles shall proceed with caution with a maximum 10 km/h on school property. All trucks must be equipped with automatic back-up alarms. If a back-up alarm is not available than a Flag person must be provided.
 - .2 Trades persons vehicles must be parked in designated parking areas with signage to indicate "Contractor Parking Only". All trades personnel are to back their vehicles into the spaces.
- 5. TOOLS AND EQUIPMENT
 - .1 The Contractor's equipment/tools must be in safe working condition, including required guards on tools and equipment and grounding devices. Operating manuals and maintenance records shall be available on request for all powered equipment.
- 6. MATERIAL STORAGE
 - .1 Contractor material and equipment must be stored in a safe manner in designated materials storage areas. These areas shall be protected at minimum with snow fencing sufficiently secured by metal posts.
 - .2 Oxygen and acetylene cylinders must be chained in the vertical position or be secured on a welding cart designed for this purpose. If not on a cart, the cylinder regulator must be removed and the cylinder cap on. Full and empty tanks are to be stored in separate fenced areas and signage provided to indicate their presence.
 - .3 Propane tanks that are not in use must not to be stored in school buildings. Propane cylinders shall not be changed indoors. Workers using propane must have Technical Standards Safety Authority (T.S.S.A.) Certification and provide proof to the Board upon request.
 - .4 Open cans of varsol, thinners and other volatile products are not permitted in the building. For storage and dispensing restrictions, refer to Item 8. "FLAMMABLE LIQUIDS".
 - .5 Paint cans must be sealed when not in use and stored in construction areas.
- 7. NATURAL GAS PIPING
 - .1 All work related to natural gas systems must be completed by a licensed gas fitter. This work may not occur while the building is occupied.
- 8. FLAMMABLE LIQUIDS
 - .1 Flammable liquids must be stored in appropriate ULC approved metal safety containers with a flame arrestor and spring-loaded cap. The contractor is responsible for the provision of proper storage containers and/or steel cabinet designed for that purpose. One day's supply of flammable liquid may be used without a steel flammable storage cabinet. However, dispensing containers for flammable liquids must be as described above and containers and dispensing

equipment must be bonded and grounded. Dispensing must be done using mechanical ventilation or be done outdoors. Equipment and dispensing methods must confirm to CSA B376-M1980 and Ontario Regulation 213/851.

9 CONTROLLED PRODUCTS (WHMIS)

- .1 All controlled products must be WHMIS labeled before being brought onto Board property. Material Safety Data Sheets for all controlled products must be available on site. The contractors are responsible for training their employees in the safe use and handling of all controlled products and proof of training must be provided as part of the Pre-Qualification.

10 SAFETY EQUIPMENT

- .1 The contractors are responsible to ensure that all employees wear safety equipment, as required, to work in a safe manner. Contractors must ensure that their employees are trained in the use of this equipment.

11 FIRE SAFETY

- 1 The contractor is responsible for providing fire extinguishers in the repair / renovation / construction areas and for ensuring that employees are trained in the use of extinguishers.
- .2 The following persons contact numbers shall be added to the school's Fire Plan – Emergency Contacts list; the Board's Capital Projects Officer, the contractor's Site Supervisor and the contractor's emergency line.

12 CIGARETTES, ALCOHOL AND ILLEGAL DRUGS

- .1 Smoking is not permitted on Board property. Consuming alcohol or illegal drugs on Board property is strictly prohibited. Persons appearing to be under the influence of alcohol or illegal drugs will be asked to leave the work site. The contractor must ensure that employees asked to leave are provided transportation home.

13 HOUSEKEEPING

- .1 Contractors must keep work site areas clean and tidy. Nails in lumber must be removed. Materials must be laid down and piled safely and garbage must be placed in proper waste containers.
- .2 The contractor must survey the site at the end of each day and remove any garbage that has not been removed as described in 13.1.

14 LADDERS, SCAFFOLDS, SWING STAGES, VERTICAL MAN-LIFTS

- .1 The contractors are responsible for training their employees in inspecting, erecting, and using scaffolds, ladders, swing stages and vertical man-lifts. Ladders must extend 3 feet beyond the upper support. Ladders must be held by a worker on the ground or tied off if over 10 feet high. Formal training must be given to workers on the proper use of scaffolds, swing stages and vertical man-lifts if used on the job. Equipment operating manuals and the required Professional Engineering documents must be available on site and produced upon request.

15 ASBESTOS

- .1 Prior to commencement of any work affecting the structure of the building, the Contractor shall review the asbestos report for the building (available through the Board's Capital Projects Officer.) The Contractor shall evaluate the potential

presence of asbestos in the specific work zone. If asbestos is present, the Board's Capital Projects Officer shall be notified immediately, and no work is to proceed until any materials containing asbestos have been dealt with in accordance with the Occupational Health and Safety Act and the Board's Asbestos Management Program.

16 PERMITS AND REGULATIONS

- .1 The Contractor shall obtain any required permits and conform to any existing applicable codes, such as the Canadian Standards Association, Underwriter's Laboratories of Canada, Ontario Fire Code, Ontario Building Code, Ontario Electrical Code, Ministry of Labour, and all local Bylaws and any other applicable regulatory requirements.
- .2 The Contractor shall record all electrical work performed on a daily basis.

17 INJURIES

- .1 Each Contractor or sub-contractor is responsible for responding to, providing treatment and transporting to medical services their injured employees. Response must include first aid to the injured person, hospital aid, securing the site and notification as required under the Occupational Health and Safety Act. Emergency Response Plans should be in place for all emergencies and pull stations used to clear the building if required. Someone on site must be certified in Standard Care First Aid. The School Principal / designate or the Board's Capital Projects Officer shall be notified of any emergency or worker injury.

18 SUPERVISION AND RESPONSIBILITY

- .1 The Contractor shall supervise and direct the work of all persons engaged in the work, including sub-contractors and those who supply materials and the contractor will be fully responsible for full compliance with the terms of the contract by all such persons. All construction shall be performed as specified and in a manner conforming to the best trade practices.

19 DEFECTIVE MATERIAL AND WORKMANSHIP

- .1 The Contractor shall promptly remove from the building all used materials and materials condemned by the Board, as failing to conform to the contract, whether incorporated in the work or not.

20 CUTTING, PATCHING, DIGGING AND FITTING

- .1 The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit to it, receive or be received by work of other contractors, shown upon or reasonably implied by the contract documents and he shall make good after them. Any costs or expenses caused by poorly coordinated or ill-timed work shall be borne by the party responsible therefore.
- .2 The Contractor shall not endanger any existing work or building by cutting, digging or otherwise.
- .3 Any work requiring the use of welders, torches etc. requires a Hot Work Permit issued by the Board's Plant Services Dept. This permit shall be coordinated through the Board's Capital Projects Officer.

-
- 21 VENTILATION
- .1 Contractor to ensure that HVAC systems are run in occupied mode 24hrs per day 7 days a week until completion of the construction contract. Contractor to make all necessary arrangements for running of the HVAC systems through the Board's Capital Projects Officer.
 - .2 Filter changes to the HVAC systems must be increased in frequency to bi-weekly changes until the work of the contract is complete.
 - .3 The Board will provide the filter changes in 21.2 to occupied areas of the school. The contractor is responsible for the filter changes in 21.2 in all unoccupied areas.
- 22 DUST CONTROL
- .1 The contractor shall provide appropriate polyethylene plastic curtains between new construction and corridors to prevent dust penetration and provide doormats and take other appropriate precautions in these rooms to prevent dirt being tracked into the school. These areas must be sealed tight with tape or other suitable material to provide a dust and vapor tight enclosure.
 - .2 Fresh air returns from construction areas shall be sealed tight or temporary filter system provided while dust-causing work is being performed.
 - .3 The contractor shall provide suitable dust control for all exterior construction activities.
 - .4 Dust control measures must be used when sweeping of floors in construction areas.
- 23 SIGNAGE
- .1 Signage shall be provided by the contractor on the occupied side of every door and entry into construction areas. Signage shall indicate "Construction Zone – Authorized Personnel Access Only" or similar wording.
 - .2 Construction signage shall also be provided by the contractor for any exterior site work activities. The signage shall indicate "Construction Zone – Authorized Personnel Access Only" or similar wording.
 - .3 In addition to items 23.1 and 23.2, the contractor shall also provide for and maintain all required construction signage by the Ministry of Labour.
- 24 BUSSING AND TRANSPORTATION ROUTES
- .1 No construction activity may occur during student drop-off and pick-up times. The Site supervisor shall obtain the bussing schedule from the school Principal / designate.
 - .2 All fire and emergency access routes shall be maintained free and clear of any obstructions 24hrs per day 7 days a week. These access routes shall also be maintained and accessible to allow for snow removal by Board retained snow removal contractors.
 - .3 The school is responsible for ensuring that the routes (described in 24.2) are clear is limited to ensuring that they are kept clear of staff, student, visitor and school

delivery vehicles.

- .4 The Board shall arrange for normal snow clearing of the parking areas and the fire and emergency access routes. The Contractor is responsible for controlling dust mud build-up of these routes.

25 SECURITY

- .1 The school must be left in a safe and secure condition at the end of every day. The Contractor is responsible for arming the building at the end of each day if school staff are not present.
- .2 The Contractor shall be solely responsible for loss or damage of his/her tools, equipment or any materials on Board property.
- .3 The Contractor shall ensure the work zone is clearly delineated with appropriate barricades to prevent unauthorized access.
- .4 The Contractor shall key all door cylinders in door entries to construction areas with a construction key different than that of any keying dedicated to the building. One key shall be provided to the following Board personnel; Principal / designate, Vice-Principal / designate, Board's Capital Projects Officer and the Custodian-in-Charge. Duplication of the construction keys is not permitted by Board personnel unless consent is provided jointly by the contractor and Board's Capital Projects Officer.
- .5 All doors and entries into construction zones shall remain locked at all times to prevent unauthorized entry into these spaces.
- .6 The Principal / designate, Vice-Principal / designate and Custodian in Charge shall access construction areas for emergency purposes only. The Board's Capital Projects Officer is entitled access to these areas to perform site review and inspection activities.
- .7 Access to all construction areas shall be made directly from the exterior only unless it is agreed to with the Principal / designate / designate and/or the Board's Capital Projects Officer that access is required through the occupied spaces.

26 WASHROOMS/TOILETS

- .1 The Contractor shall provide and maintain in a sanitary condition, washrooms and toilets for the use of all persons at the work site, and upon completion of the work, remove it and contents, and leave its site in a neat, clean and sanitary condition. Workers shall use designated washrooms as designated by their employer.
- .2 School washrooms/toilets are not to be used by any trades persons.

27 SAFE EXCAVATION/DRILLING PRACTICES

- .1 Prior to work commencing the Contractor shall adhere to the following the procedures;
 - .1.1 Obtain ground locates of the following utilities, but not limited to, water, electrical, gas, Bell, fiber optics, ground source heating lines. Locates are to be physically identified on the ground with paint or flags and the Contractor shall obtain a certificate by the Locate Contractor with a sketch

map identifying these locates. A copy of such is to be provided to the School Board and it is obligatory that the School Board's Capital Projects Officer review the site to confirm the presence of the paint identification markings, flags etc. prior to the work commencing.

- .1.2 The Locate/certificate shall not go beyond the expiry date. In the event that the certificate expires the contractor shall obtain new locates and follow the procedures described in 27.1.1
- .1.3 The contractor shall provide minimum 48hrs notice of the work activities to the School Board's Capital Projects Officer and the contractor shall provide a schedule of the work.
- .2 The Contractor shall be knowledgeable of all Safe Digging regulations for each Utility Company.

END OF SECTION

Abbreviations listed, when used in the Contract Documents, shall have the following meanings:

ABBREVIATION	MEANING
AA	ALUMINUM ASSOCIATION
AAMA	ARCHITECTURAL ALUMINUM MANUFACTURERS' ASSOCIATION
AASHO	AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS
ACI	AMERICAN CONCRETE INSTITUTE
AGA	AMERICAN GAS ASSOCIATION
AIA	AMERICAN INSTITUTE OF ARCHITECTS
AIMA	ACOUSTICAL & INSULATING MATERIALS ASSOCIATION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AMCA	AIR MOVING AND CONDITIONING ASSOCIATION INC.
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING & AIR CONDITIONING ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWI	ARCHITECTURAL WOODWORK INSTITUTE (USA)
AWMAC	ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA
AWS	AMERICAN WELDING SOCIETY
CCA	CANADIAN CONSTRUCTION ASSOCIATION
CCRC	CANADIAN CODE FOR RESIDENTIAL CONSTRUCTION
CEC	CANADIAN ELECTRICAL CODE
CFUA	CANADIAN FIRE UNDERWRITERS ASSOCIATION
CGA	CANADIAN GAS ASSOCIATION
CGSB	CANADIAN GENERAL STANDARDS BOARD
CIQS	CANADIAN INSTITUTE OF QUANTITY SURVEYORS
CISC	CANADIAN INSTITUTE OF STEEL CONSTRUCTION
CITC	CANADIAN INSTITUTE OF TIMBER CONSTRUCTION
CLA	CANADIAN LUMBERMEN'S ASSOCIATION
CMHC	CANADA MORTGAGE & HOUSING CORPORATION
COFI	COUNCIL OF FOREST INDUSTRIES OF BRITISH COLUMBIA
CPCI	CANADIAN PRESTRESSED CONCRETE INSTITUTE
CRCA	CANADIAN ROOFING CONTRACTORS ASSOCIATION
CSA	CANADIAN STANDARDS ASSOCIATION
CSC	CONSTRUCTION SPECIFICATIONS CANADA
CSI	CONSTRUCTION SPECIFICATIONS INSTITUTE (USA)
CSPI	CORRUGATED STEEL PIPE INSTITUTE
CSSBI	CANADIAN SHEET STEEL BUILDING INSTITUTE
CUA	CANADIAN UNDERWRITERS' ASSOCIATION
CWB	CANADIAN WELDING BUREAU
CWC	CANADIAN WOOD COUNCIL
DND	DEPARTMENT OF NATIONAL DEFENCE, CANADA
FM	FACTORY MUTUAL ENGINEERING CORPORATION
FS	FEDERAL SPECIFICATION (USA)
IES	ILLUMINATING ENGINEERING SOCIETY
IGMAC	INSULATED GLASS MANUFACTURERS ASSOCIATION OF CANADA
LTIC	LAMINATED TIMBER INSTITUTE OF CANADA
MIA	MARBLE INSTITUTE OF AMERICA
MPMDD	MODIFIED PROCTOR MAXIMUM DRY DENSITY
NAAMM	NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (USA)
NBFU	NATIONAL BOARD OF FIRE UNDERWRITERS

NBC	NATIONAL BUILDING CODE OF CANADA
NBS	NATIONAL BUREAU OF STANDARDS (USDC)
NEMA	NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NHLA	NATIONAL HARDWOOD LUMBER ASSOCIATION (USA)
NLGA	NATIONAL LUMBER GRADES AUTHORITY
NRC	NATIONAL RESEARCH COUNCIL
OBC	ONTARIO BUILDING CODE
OHSA	OCCUPATIONAL HEALTH AND SAFETY ACT
OPSS	ONTARIO PROVINCIAL STANDARD SPECIFICATIONS
PCA	PORTLAND CEMENT ASSOCIATION
PCI	PRESTRESSED CONCRETE INSTITUTE
SDI	STEEL DECK INSTITUTE
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
SSPC	STEEL STRUCTURES PAINTING COUNCIL
TTMAC	TERRAZZO, TILE & MARBLE ASSOCIATION OF CANADA
ULC	UNDERWRITERS LABORATORIES CANADA
UL	UNDERWRITERS LABORATORIES (USA)
USAS	UNITED STATES OF AMERICA STANDARDS INSTITUTE
WSIB	WORKPLACE SAFETY AND INSURANCE BOARD

END OF SECTION

1 REFERENCES

- .1 Occupational Health and Safety Act and Regulations for Construction Projects (2000) (Ontario Regulation 213/91, amended by Reg. 631/94, & Reg. 145/00).
- .2 National Fire Code of Canada (2005)
- .3 Ontario Fire Code (2005)
- .4 Ontario Building Code (2006)

2 INSTALLATION AND REMOVAL

- .1 Provide temporary utilities, facilities and controls in order to execute the work expeditiously. Remove from site all such work after use.

3 VEHICULAR ACCESS & PARKING

- .1 Provide and maintain adequate access to project site.
- .2 Build and maintain temporary access roads where indicated or required, and provide snow removal during period of work.
- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads. Maintenance shall include regular snow removal if not provided under separate contract, and regular power washing to remove mud and dirt.
- .4 Where site access for construction vehicles necessitates use of public roads, remove mud and dirt from such roads where contaminated by construction vehicles.
- .5 Traffic Control: Provide and maintain flag persons, traffic signals, barricades and flares, lights, or lanterns as required to perform the work and protect the public.
- .6 Construction Parking
 - .1 Parking for construction equipment vehicles will be limited to the site or immediate areas of work.
 - .2 Parking for Contractors' and Sub-contractors' personal vehicles will be limited to Construction Site provided it does not constitute a safety hazard nor disrupt the performance of Work.

4 TEMPORARY UTILITIES

- .1 Ventilating
 - .1 Prevent hazardous accumulation of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure 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 a time after cessation of work process, to assure removal of harmful elements.

- .5 Maintain strict supervision or operation of temporary heating and ventilating equipment.
 - .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.
- .6 The permanent HVAC systems of the building, or portions thereof, may not be used during construction.

5 CONSTRUCTION FACILITIES

- .1 Temporary Communication
 - .1 Provide and pay for temporary communication systems to be installed in Field Office.
 - .2 Provide hard wire and wireless internet access.
 - .3 Cellular telephones are acceptable. Pay telephone is not acceptable.
- .3 Equipment, Tools and Materials Storage
 - .1 Provide adequate weather tight enclosures with raised floors, for storage of materials, tools, and equipment, which are subject to damage by weather.
 - .2 Temporary enclosures required by sub-trades as workshops shall be provided by those trades.
- .4 Site Storage and Overloading
 - .1 Confine the Work and the operations of employees to limits indicated by the Contract Documents. Do not unreasonably encumber the premises with products.
 - .2 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the Work.
- .5 Sanitary Facilities
 - .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances. Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition. Where portable toilet facilities are provided, empty and sanitize such facilities on a weekly basis, or more frequently if required.

6 CONSTRUCTION SAFETY MEASURES

- .1 The Contractor agrees that the Board is not to be understood as the employer to any Contractor nor to such Contractor's personnel or staff for any work, services, or supply of any products or materials that may be awarded as a result of this Call for Bid document. The Contractor herewith agrees to be the "Constructor" as defined in the Occupational Health and Safety Act.

- .2 Observe all construction safety measures as required by the General Conditions of the Contract, Act and Regulations for Construction Projects (2000) (Ontario Regulation 213/91, amended by Reg. 631/94, & Reg. 145/00) and by all authorities having jurisdiction, provided that in case of conflict or discrepancy, the more stringent requirements shall apply.
- .3 Provide applicable spare safety equipment such as helmets, safety glasses, and harnesses, and enforce their use by Consultants, the Owner, their representatives and any authorized visitors to the site.
- .4 Provide and maintain fences, gates and locks, covered walkways, guard rails, barriers, night lights, and appropriate warning signage as required for the protection of the public, and of public and private property; as required by the General Conditions of the Contract, the Occupational Health and Safety Act and Regulations for Construction Projects, and by all authorities having jurisdiction. Erect and maintain sturdy railings around shafts, and the like, to protect workers and the public from injury.
- .5 Workplace Hazardous Materials Information System
 - .1 Comply with all requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets.
 - .2 Include copies of all WHMIS data sheets in Operations and Maintenance Manuals.
- 7 CONSTRUCTION AIDS
 - .1 Falsework
 - .1 Design and construct falsework in accordance with CSA S269.1.
 - .2 Scaffolding
 - .1 Design, construct and maintain scaffolding in accordance with CSA S269.2.
 - .2 Erect scaffolding independent of walls. Remove promptly when no longer required.
 - .3 Hoisting
 - .1 Provide, operate and maintain hoists or cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
 - .2 Hoists or cranes shall be operated by qualified operator.
- 8 TEMPORARY BARRIERS & ENCLOSURES
 - .1 Construction Isolation Fencing
 - .1 Erect isolation fencing around perimeter of construction areas to protect the public, workers, and the public from injury.
 - .2 Construction Isolation Fencing shall consist of:
 - .1 Temporary modular welded wire mesh fencing, minimum 1828 x

2440mm high, by CanFence Rentals Ltd., or equivalent.

- .2 Provide lockable gates within hoarding / fencing for access to site by workers and vehicles.
- .3 Provide barriers around trees and planting beds designated to remain. Protect from damage.
- .4 Enclosure of Structure
 - .1 Provide temporary weather tight enclosures and protection for exterior openings until permanently enclosed.
 - .2 Erect enclosures to allow access for installation of materials and working inside enclosure.
 - .3 Erect enclosures to withstand wind pressure and snow loading.
 - .4 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.
- .5 Dust Control
 - .1 Provide dust tight screens or partitions to localize dust generating activities, and for the protection of workers, or finished areas of Work.
 - .2 Dust screens shall consist of, as a minimum, 0.15mm thick fire retardant polyethylene sheets secured to appropriate framing and sealed at all joints and at perimeter to prevent migration of dust
 - .1 Poly sheet: Polytarp, Super Six by Polytarp Products or approved alternative.
 - .3 Maintain and relocate protection until such work is complete.
 - .4 Provide dust catching walk-off matting, at all construction entrances.
- .6 Security Measures
 - .1 Where progress of construction reaches point where building exterior is fully enclosed, provide construction cylinders for doors, and secure building against intrusion. Where installation of fixtures and equipment, or storage of materials and equipment, inside the building has begun prior to installation of exterior windows and doors, provide temporary plywood enclosures for window and door openings to prevent intrusion until permanent closures are in place.
 - .2 Extent of security services shall be at the sole discretion of the Contractor (except as noted in item .3 below) and all costs incurred shall be paid for by the Contractor. Note that the fit, finish and new appearance of the finished building will not be compromised to accommodate temporary security provisions. Materials, products, finishes, etc. damaged due to vandalism are to be restored and/or replaced to an as-new condition.
 - .3 Commencing at a date which is four (4) months prior to the scheduled date for Substantial Performance, Contractor shall arrange and pay for the provision of "after hours" manned security at the project site. Security shall

provide surveillance and oversight of the building and site areas, during all times when the Contractor's construction personnel are not in attendance. Continue services until time of substantial completion.

.7 Site Signs and Notices

- .1 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by Consultant.
- .2 No other signs or advertisements of any description except notices regarding safety and instruction, shall be put up around the building, or site, without the approval of the Consultant.

9 TEMPORARY CONTROLS

.1 Drainage

- .1 Refer to Section 01 57 19 – Temporary Environmental Controls and Site Grading and Servicing Drawings.

.2 Tree and Plant Protection

- .1 Refer to Section 01 57 19 – Temporary Environmental Controls and Landscape Drawings.

END OF SECTION

1 REFERENCES

- .1 National Building Code of Canada (2005)
- .2 National Fire Code of Canada (2005)
- .3 Ontario Fire Code (2007)
- .4 Guidelines for Maintaining Fire Safety during Construction in Existing Buildings, (10/31/88) Ontario Ministry of the Solicitor General, Office of the Fire Marshal.
- .5 Ontario Building Code (Regulation 350/06)

2 FIRE SAFETY

- .1 Fire Fighting Equipment
 - .1 Provide and maintain in working order, ULC labelled, 9kg 4A 60BC type fire extinguishers, and locate in prominent positions to approval of authorities having jurisdiction.
- .2 Fire Department Access
 - .1 Provide and maintain fire access routes as designed, as soon as construction sequence will allow. Access routes must have compacted granular subbase, and base in place before superstructure of building may proceed.
 - .2 Construction activities must not obstruct access routes designated for fire department equipment. If necessary that existing access be obstructed or deleted, alternative access, acceptable to the fire department, must be provided prior to commencement of construction, in accordance with Ontario Building Code location and design criteria for required access routes.
- .3 Control of Combustible Materials
 - .1 The stockpiling of construction materials adjacent to the existing building must be carefully controlled in accordance with the Ontario Fire Code. Materials stored, and their proximity to, equipment used in construction may create a fire hazard. Control of combustibles on a construction site is regulated under the Occupational Health and Safety Act.
- .4 Hot Work
 - .1 Conform to the requirements of the Occupational Health and Safety Act – Regulations for Construction Projects.
 - .2 Provide all necessary guards and barriers to protect workers, property, and the public when performing hot work such as torching, cutting or coring. Protect all adjacent combustible materials.
 - .3 Provide a "Fire Watch" for a minimum of 3 hours after each instance of discontinuing hot work.

END OF SECTION

1 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

2 SUBMITTALS

- .1 Submittals: in accordance with Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to Site, submit Environmental Protection Plan for review and approval by Consultant
Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan: include:
 - .1 Name(s) of person(s) responsible for ensuring adherence to Environmental Protection Plan;
 - .2 Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from Site;
 - .3 Name(s) and qualifications of person(s) responsible for training site personnel;
 - .4 Descriptions of environmental protection personnel training program;
 - .5 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial and Municipal laws and regulations;
 - .6 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on Site;

- .7 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff;
- .8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas;
- .9 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance;
- .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris;
- .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off-site;
- .12 Contaminant prevention plan that: identifies potentially hazardous substances to be used on Site; identifies intended actions to prevent introduction of such materials into air, water or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials;
- .13 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water and water used in flushing of lines;
- .14 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands;
- .15 Pesticide treatment plan: to be included and updated, as required.

3 FIRES

- .1 Fires and burning of rubbish on Site is strictly prohibited.

4 DISPOSAL OF WASTES

- .1 Burying of rubbish and waste materials on Site is strictly prohibited.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

5 TREE AND PLANT PROTECTION

- .1 Protect existing trees and plants on all adjacent properties, where in close proximity to construction activities, or where construction access passes within 3m of trees or plants, whether indicated on drawings or not.
- .2 Conform to all local By-Laws regarding tree preservation and protection.
- .3 Protect existing trees and plants on site as indicated.
- .4 Restrict tree removal to those designated by Consultant. Wrap in burlap trees and shrubs adjacent to construction work, storage areas and trucking lanes. Encase trees and shrubs with protective wood framework from grade level to height of 2134mm.
- .5 Protect roots to minimum 1m beyond dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones of protected trees. Minimize stripping of topsoil and vegetation.
- .6 The Minimum Tree Protection Zone will be the drip line. Within this tree protection zone there will also be no construction activity including but not limited to no root cutting, no alteration or disturbance to existing grades of any kind, no changes to the grade by adding fill, excavating or scraping, no storage of construction materials or equipment, no stockpiling of soil, debris or construction waste, & no movement or storage of heavy vehicles or equipment. Tree protection barriers must be included and priced as part of the project. For short term project (up to 2 months), standard T-bars and plastic safety fence can be used. For a longer term project, use 10 gauge chain link fence and standard T-bars. In all cases, standard T-bars should not be spaced more than 6 to 7 feet apart. These protection barriers must be erected before the project starts, must be maintained throughout the project, and taken down when final inspection and signoffs are completed.

6 WORK ADJACENT TO WATERWAYS/DRAINAGE DITCHES

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid construction materials across waterways.
- .6 Avoid indicated spawning beds constructing temporary crossings of waterways.

7 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.

- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- 8 HISTORICAL / ARCHAEOLOGICAL ARTIFACTS
 - .1 In the event that buried archaeological remains are encountered on the property during construction activities, the Heritage Operations Unit of the Ministry of Tourism and Culture be notified immediately.
 - .2 In the event that human remains are encountered during construction, the proponent should immediately contact both the Ministry of Tourism and Culture, and the Registrar or Deputy Registrar of Cemeteries at the Cemeteries Regulation Unit, Ministry of Government Services, (416) 326-8404.
- 9 NOTIFICATION
 - .1 Consultant will notify Contractor in writing of observed non-compliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan. Contractor shall, after receipt of such notice, inform Consultant of proposed corrective action and take such action for approval by Consultant.
 - .2 Consultant will issue stop order of Work until satisfactory corrective action has been taken.
 - .3 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

1 PRODUCT OPTIONS

- .1 Provide products specified under individual specification sections. Where Specification lists two or more products, or two or more manufacturers of the same product, the Contractor may select one of the listed products or manufacturers. Confirm selection of products and manufacturers when requested by the Consultant.
- .2 When only one product or manufacturer is listed in the specifications, it is intended that only that product or manufacturer is acceptable.

2 PRODUCT SUBSTITUTION PROCEDURES

- .1 Substitution Procedures During Construction
 - .1 Products may only be substituted during the Construction period for one or more of the following reasons:
 - .1 Insolvency of the product manufacturer.
 - .2 Inability of the manufacturer to provide the product(s) in the timeframe required to maintain the construction schedule.
 - .3 Product specified has been discontinued.
 - .4 Substitution proposed offers better performance than that specified, at no additional cost.
 - .5 Substitution offers equivalent performance to that specified, at a reduced cost to the Owner (reduction in Contract Price).
 - .2 Items 2.1.1.2, and 2.1.1.3 will require a letter from the manufacturer, confirming their inability to provide the products specified, or inability to meet the schedule.
 - .3 Items 2.1.1.4, and 2.1.1.5 will be at the discretion of the Owner.

3 AVAILABILITY

- .1 Immediately upon signing Contract, review Product delivery requirements, and identify lead times for supply of all Products. If lead times in supply of Products may affect the Construction Schedule, notify the Consultant in order that appropriate action may be authorized in ample time to prevent delay in performance of the Work.
- .2 The Contractor shall order Products and materials in a timely fashion so as to ensure that delivery of such Products and materials shall coincide with the Construction Schedule. Failure of the Contractor or their Subcontractors to order Products and materials in a timely fashion, shall not be cause for substitution in accordance with the criteria set out under Article 2 – Product Substitution Procedures.
- .3 In the event of failure to notify the Consultant of Product delivery problems at the commencement of the Work, and should it appear that the Work may be delayed for such reason, the Consultant reserves the right to substitute more readily available Products of similar character of their choosing, at no increase in Contract Price.

4 REFERENCE STANDARDS

- .1 Within the specifications, reference standards are identified. Conform to these standards, in whole or part, as specifically requested.

- .2 If there is question as to whether any product or system is in conformance with applicable standards, the Consultant reserves the right to have such products or systems tested to prove or disprove conformance.
 - .3 The cost for such testing will be borne by the Contractor in the event of non-conformance.
 - .4 Conform to latest date of issue of referenced standards in effect on date of submission of bids, except where a specific date of issue is specifically noted.
- 5 **PRODUCT TRANSPORTATION & DELIVERY**
- .1 Transportation and delivery costs of Products required in the performance of the Work, are included in the Contract Price.
 - .2 Transportation and delivery costs of Products supplied by the Owner will be paid for by the Owner. Unload, handle, and store such Products on site.
 - .3 Products must be appropriately crated, skidded, boxed, shrink-wrapped, or otherwise packaged to protect such products from damage during shipment. Products which arrive at the site in a damaged condition must be rejected and returned to the supplier/manufacturer for immediate replacement.
 - .4 Advise the Owner 30 days in advance of anticipated delivery dates for materials and equipment supplied by the Owner.
- 6 **PRODUCT STORAGE, HANDLING AND PROTECTION**
- .1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions.
 - .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 the 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 and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
 - .7 Store paints in a 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 the satisfaction of the Consultant.

7 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's printed 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 the specifications and manufacturer's instructions, so that Consultant may establish correct course of action.
- .3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes the Consultant to require removal, replacement where necessary, and re-installation at no increase in Contract Price.

8 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 the affected specification Section.
- .4 Space anchors within limits of load limit or shear capacity and ensure that 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.
- .7 Obtain Consultant's approval before using explosive actuated fastening devices.

9 QUALITY OF MATERIALS

- .1 Products, materials, equipment and articles (referred to as Products throughout the specifications) incorporated in the Work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Products relying on uniformity of colour and pattern for appearance, such as resilient flooring, carpeting, fabrics, and vinyl wallcovering, shall be from one dye lot for the project. All products delivered to the site must be labeled as to dye lot, or production run number, as well as production date.
- .3 Defective products, whenever identified prior to the completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.

- .4 Should any dispute arise as to the quality or fitness of Products, the Consultant may request additional testing based upon the requirements of the Contract Documents, to confirm acceptability of products or materials. Refer to Article 10 - Defective Materials and Work, and Section 01 40 00.
 - .5 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item throughout the building.
 - .6 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.
- 10 DEFECTIVE MATERIALS AND WORK
- .1 Where evidence exists that defective work has occurred, or that work has been carried out incorporating defective products, the Consultant may have independent tests, inspections, or surveys performed in order to determine if work is defective.
 - .2 Tests, inspections, or surveys carried out under these circumstances will be made at the Contractor's expense in the event of defective work, or at the Owner's expense where work is in conformance. Where tests incorporate a number of samples, payment will be assessed, by the Consultant, based on the ratio of conforming to non-conforming results. This does not include re-testing of soil compaction during placement, where evidence exists of non-conformance with the Contract documents, but rather only if re-testing is called for after completion of compaction.
- 12 WARRANTIES & GUARANTEES
- .1 Guarantee and warrant all products and labour forming part of the Work for minimum one year unless extended warranties are otherwise specified herein.
 - .2 Guarantee and warrant products and assemblies for the specified periods of time where in excess of the Contract Warranty, as specified within their respective sections. The following list of extended warranties shown here are for information. All extended warranties must be supplied whether listed below or not. Refer to Specifications inclusive for requirements.
 - .1 Aluminum Curtain Wall – Section 08 44 13 – 5 years, 10 years on sealed glazing units.
 - .2 Aluminum Windows and Entrances – Section 08 51 00 – 10 years
 - .3 Glass and Glazing Section 08 80 50 – 5 years, 10 years on sealed glazing units.
 - .4 Window Coverings (including Motorized Roller Shades – Section 12 21 23 – 3 years
 - .3 Warranties and Guarantees shall commence at Date of Substantial Performance of the Contract as certified by the Consultant.
 - .4 Warranties and Guarantees shall be original copies, printed on company letterhead, or on a standard company warranty certificate, bearing the name of the company.
 - .5 Warranties and Guarantees shall indicate:

- .1 Name of the Principal (the Manufacturer/Subcontractor),
- .2 Name of the Obligee (the Owner),
- .3 Name and address of Project,
- .4 Commencement date (Date of Substantial Performance),
- .5 Duration of warranty or guarantee,
- .6 Clear statement of what is included, and what if any exclusions there are,
and
- .7 Signature of Principal's representative having signing authority.

END OF SECTION

1 EXAMINATION

.1 Acceptance of Conditions

- .1** The General Contractor shall examine all existing or pre-determined conditions, prior to commencing work in that area, and report to the Consultant all conditions unacceptable for work to proceed. Commencement of work shall imply acceptance of conditions as is.
- .2** Subcontractors shall examine all existing or pre-determined conditions affecting their portion of the Work, prior to commencing such work, and report to the Contractor all conditions unacceptable for work to proceed. Commencement of work shall imply acceptance of conditions as is.

2 PREPARATION

.1 Field Engineering

- .1** Locate, confirm and protect control points prior to starting the Work. Preserve permanent reference points during construction.
- .2** Establish reference lines and elevations. Locate and lay out by instrumentation.

.2 Records

- .1** Maintain a complete, accurate log of control points and survey work as work progresses.

3 CUTTING AND PATCHING

.1 Submit a written request in advance, for approval of cutting or alteration which affects:

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

.2 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.3 After uncovering, inspect conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

.4 Perform cutting, fitting and patching, including excavation and fill, to complete the Work. Perform work to avoid damage to other work.

.5 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.6 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.

.7 Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with fire stopping material, full thickness of construction element.

- .8 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
- .9 Provide all openings greater than 200mm in non-structural elements of work for penetrations of mechanical and electrical work. Mechanical and Electrical Subcontractors shall provide all sleeves and locations for sleeves. The cost of all cutting and patching required by Mechanical and Electrical Subcontractors shall be paid for by those trades.
- .10 Ensure that all cutting and patching work, including that by Mechanical and Electrical Subcontractors, is properly performed by the respective trades skilled in that line of work. Restore work with new products in accordance with Contract Documents.

4 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of mechanical and electrical equipment, fixtures and devices indicated or specified, are to be considered as approximate. Final location of such items will be determined on site, based on integration with structural and architectural elements, and as required by coordination with other trades. In the event of a conflict, final determination of location of these items rests with the Consultant.
- .2 Prepare and submit for review by the Consultant, interference field drawings, to indicate relative position of various services and equipment, at the following locations as a minimum:
 - .1 Under all rooftop mechanical units.
 - .2 At locations of all major ductwork, piping, and conduit crossovers.
 - .3 Where ductwork passes under major structural elements.
- .3 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.
- .4 Request a review of items by Consultant once rough-in is underway, prior to final installation, and obtain approval for actual locations.

5 CONCEALMENT

- .1 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas, except where indicated otherwise.
- .2 In existing building, all pipes shall be enclosed in shafts. All conduit shall be placed in accordance with approved conduit shop drawings.

6 LIGHTING FIXTURES AT SUSPENDED CEILINGS

- .1 Ensure that secure support is provided for lighting fixtures by suspended ceilings, or by separate hangers, or by both.
- .2 Coordinate the ceiling system and lighting fixture installations to provide adequate support.
- .3 Submit affidavits with acceptable design information confirming that the installation of the suspended ceiling system and/or separate fixture hangers will provide adequate support for the lighting fixtures without exceeding specified deflection tolerances for the ceiling system.

- .4 Conform to current requirements of the Electrical Safety Authority (ESA).

7 EXISTING SERVICES

- .1 Where work involves the interruption of, or connection to existing services, carry out such work as directed by governing authorities, with minimum of disturbance to pedestrian and vehicular traffic.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify Consultant of findings.
- .3 Submit schedule to, and obtain approval from Consultant for any shutdown or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .5 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.
- .6 Remove abandoned service lines to distance of 1821mm from foundations. Cap or otherwise seal lines at cut-off points as directed by Consultant.
- .7 Record locations of maintained, re-routed and abandoned service lines.

8 PROTECTION OF WORK IN PROGRESS

- .1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Consultant, at no increase in Contract Price.
- .2 Prevent overloading of any part of the building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Consultant.
- .3 Protect finished surfaces with overlays of protective materials such as Kraft paper, cardboard, or plywood, as required for individual applications to provide adequate protection.

END OF SECTION

1 GENERAL

- .1 Conduct cleaning and disposal operations to comply with local ordinances and environmental protection legislation.
- .2 Store volatile wastes in covered metal containers, and remove from premises at end of each working day.
- .3 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

2 CLEANING DURING CONSTRUCTION

- .1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste material and debris from the work areas and deposit in waste container at the end of each working day.
- .3 Vacuum clean interior areas prior to start of finishing work. Maintain areas free of dust and other contaminants during finishing operations.
- .4 Individual Subcontractors are responsible for the daily clean-up and removal of debris related to, or generated by, their own work. The overall responsibility for project cleanliness rests with the Contractor.

3 WASTE MANAGEMENT

- .1 Audit, separate and dispose of construction waste generated by new construction or by demolition of existing structures in whole or in part, in accordance with Ontario Regulations 102/94 and 103/94 made under the Environmental Protection Act.
- .2 Fires, and burning of rubbish or waste on site is prohibited.
- .3 Burying of rubbish or waste materials, except as specified herein, is prohibited.
- .4 Disposal of waste or volatile materials such as mineral spirits, oil, gasoline or paint thinner into ground, waterways, or sewer systems is prohibited.
- .5 Empty waste containers on a regular basis to prevent contamination of site and adjacent properties by wind-blown dust or debris.

4 FINAL CLEANING OPERATIONS

- .1 Immediately following Date of Substantial Performance, and prior to Owner occupancy of the building or portion of the building affected by the Work, conduct full and complete final cleaning operations.
- .2 Final cleaning operations shall be performed by an experienced professional cleaning company, possessing equipment and personnel sufficient to perform full building cleaning operations.
- .3 Remove all surplus products, tools, construction machinery and equipment not required for the performance of remaining work, and thereafter remove any remaining materials, equipment, waste and debris.

- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .6 Cleaning operations shall include the removal of all stains, spots, scuff marks, dirt, dust, remaining labels, adhesives or other surface imperfections.
- .7 Remove all paint spots or overspray from all affected surfaces.
- .8 Clean and polish all glass and mirrors. Replace broken, scratched or disfigured glazing. Remove remaining manufacturer's and safety "X" labels.
- .9 Clean and polish all finished metal surfaces such as enameled or stainless steel, chrome, aluminum, brass, and bronze.
- .10 Clean and polish all vitreous surfaces such as plumbing fixtures, ceramic tile, porcelain enamel, or other such materials.
- .11 Clean all ceramic tile surfaces in accordance with the manufacturer's instructions, and apply final coat of sealer where specified.
- .12 Clean inside of all millwork and cabinetry.
- .13 Vacuum, clean and dust behind grilles, louvres and screens.
- .14 Sealing and waxing of resilient floor surfaces shall be done by Contractor in accordance with manufacturer's written instructions. Coordinate final cleaning and scheduling of sealing and waxing.
- .15 Broom clean and spray wash all exterior paved surfaces.
- .16 Remove dirt and other disfiguration from exterior surfaces.
- .17 Clean all roofs, gutters, downspouts, areaways, drywells, and drainage systems.
- .18 Clean all equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment.

END OF SECTION

- 1 **INSPECTION AND DECLARATION PROCEDURES**
 - .1 Arrange for, conduct and document final inspections, close-out and commissioning at the completion of the Work in accordance with the Conditions of the Contract (CCDC 2 - 2020), Divisions 00 & 01, Specifications, and as described herein this Section.
- 2 **SUBSTANTIAL PERFORMANCE**
 - .1 Refer **General Conditions of the Contract (CCDC 2 - 2020) GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK**
 - .2 Refer **General Conditions of the Contract (CCDC 2 - 2020) GC 5.8 DEFICIENCY HOLDBACK**
- 3 **DEFICIENCY REVIEWS POST SUBSTANTIAL PERFORMANCE**
 - .1 Following the issuance of the Certificate of Substantial Performance and prior to the Contractor's application for Final Payment and release of any monies retained as "Finishing Holdback", the Contractor shall continue to complete unfinished work and correct deficiencies. At the request of the Contractor, the Consultants shall conduct up to two general deficiency reviews during this period.
 - .2 The Final Deficiency Review will be undertaken only if the Contractor has inspected the Work, and states in writing that the unfinished work noted in their application for Substantial Performance has been 100% completed.
 - .3 Should further review by Consultants be required due to failure of the Work to comply with Contract Documents or the criteria set out herein, the Owner will deduct amount of Consultant's compensation for re-inspection services from monies owed to the Contractor.
- 4 **DEFICIENCY HOLDBACK**
 - .1 Refer **General Conditions of the Contract (CCDC 2 - 2020) GC 5.8 DEFICIENCY HOLDBACK**
- 5 **LIEN PERIOD AND RELEASE OF BASIC HOLDBACK**
 - .1 Refer **General Conditions of the Contract (CCDC 2 - 2020) GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK - PAYMENT OF HOLDBACK**
 - .2 Commencement of Lien Periods
 - .1 The day following the date of publication of Certificate of Substantial Performance shall be the date of commencement of the Construction Lien Period prior to release of basic holdback, unless required otherwise by lien statute of the Place of the Work.
 - .2 At the expiry of the Construction Lien period, the Contractor shall make application for Release of Basic Holdback.
 - .3 The Consultant shall prepare the Certificate for Payment for release of basic holdback, and promptly upon receipt of the necessary documentation, issue the Certificate for Payment to the Owner.

-
- 6 FINAL INSPECTION AND PAYMENT
- .1 Refer **General Conditions of the Contract (CCDC 2 - 2020) GC 5.5 FINAL PAYMENT**
 - .2 Submit a signed statement stating following have been performed:
 - .1 Work has been reviewed for compliance with Contract Documents,
 - .2 All deficiencies have been corrected,
 - .3 All unfinished work has been completed, and
 - .4 Work is complete and ready for Final Inspection.
 - .3 When items noted above are completed, the Owner, the Consultants, and the Contractor will perform a final inspection of the Work.
 - .4 If the Work is deemed incomplete, complete outstanding items and request a re-inspection.
 - .5 If the Work is deemed to be complete, the Consultant will issue a Final Certificate for Payment.

END OF SECTION

- 1 OPERATION AND MAINTENANCE MANUALS
 - .1 General
 - .1 Prepare Operation and Maintenance Manual during the course of construction and have completed prior to Date of Substantial Performance.
 - .2 Submission
 - .1 Maintain one copy of the Operation and Maintenance Manual volume(s) for periodic review and comment, as requested by the Consultant during the course of construction.
 - .2 Submit two (2) final hard copies and one (1) USB device with PDF version of all documents of the final completed volume(s) with the application for Substantial Performance.
 - .3 Format
 - .1 Bind data in commercial quality, 219 x 279mm, "D" ring binders, having clear cover and spline pockets.
 - .2 Identify each binder on the cover and spline with the following:
OPERATION & MAINTENANCE MANUALS
School Name and Project
VOLUME ____ OF ____
 - .3 Provide table of contents and index tab sheets for each volume. Itemize and tabulate contents.
 - .4 Provide drawings with reinforced punched binder tab, or insert into clear sleeves in folded format. Group drawings as to content, and index for quick reference.
 - .4 Contents - Each Volume
 - .1 Table of Contents: provide title of Project, Date of submission and names:
 - .1 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties;
 - .2 Schedule of products and systems, indexed to content of volume.
 - .2 For each product or system: List names, addresses and telephone numbers of sub-contractors 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 Operation and Maintenance Manuals shall contain, as a minimum, the following information:
 - .1 List of Contents; cross-referenced to each Volume.
 - .2 Contact information for maintenance and repairs
 - .3 Warranty and guarantee certificates
 - .4 Catalogue of all maintenance materials and quantities
 - .5 Complete list of Contractor, Subcontractors and suppliers, indicating name, address, telephone & fax numbers, email addresses, name of contact person and description of work done.
 - .6 Complete list of products used in the work, indicating product name and manufacturer for each listing.
 - .7 Copy of Finish Hardware List, complete with all amendments and revisions, if applicable.
 - .8 Schedule of paints and coatings. Include sufficient explanation to fully identify each surface with the applicable paint or coating used. Enclose copy of Colour Schedule.
 - .9 All "reviewed" shop drawings.
 - .10 Maintenance instructions for all finished surfaces.
 - .11 Brochures and cuts of all equipment and fixtures.
 - .12 Operating and maintenance instructions for all equipment.
 - .13 All Warranties and Guarantees required by the Specifications for this Work.
- .5 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .6 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

2 AS-BUILT DRAWINGS

- .1 Record information on a clean set of black line opaque drawings. Consultant will provide two (2) complete sets of printed project drawings, (one complete CADD set on disc) and two (2) complete sets of specifications for the purpose of recording as-built conditions.
- .2 Maintain as-built drawings on site and update as construction progresses. Allow periodic review by Consultant as requested.
- .3 Record information concurrently with construction progress. Do not conceal work until required information is recorded.
- .4 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
 - .4 References to related shop drawings and modifications.

3 MATERIALS AND FINISHES

- .1 Building Products, Applied Materials, and Finishes: include product data, with

-
- catalogue number, size, composition, and colour and texture designations.
Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections.
- 4 **MAINTENANCE MATERIALS, SPARE PARTS & TOOLS**
- .1 Provide spare parts in quantities specified in individual specification sections.
Provide identical items to those installed in the Work.
- .2 Provide maintenance materials in quantities specified in individual specification sections. Provide identical items of same manufacturer, dye lot or production run as items in the Work.
- .3 Provide special tools in quantities specified in individual specification sections, and tag items identifying their function and equipment or products to which they are associated.
- .4 Receive and catalogue all items. Check inventory and include approved listings in Operations and Maintenance Manual.
- .5 Obtain receipts for delivered products and submit prior to Substantial Performance.
- .6 **Quality**
- .1 Spare parts, maintenance materials and special tools provided shall be new, not damaged or defective, and of the same quality and manufacture as products provided in the Work.
- .2 If requested, furnish evidence as to type, source and quality of Products provided.
- .3 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .7 **Delivery, Storage, And Handling**
- .1 Deliver all materials required as maintenance materials, spare parts or special tools, to the site, include shipping costs, and store as directed.
- .2 Store spare parts, maintenance materials and special tools in a manner to prevent damage, or deterioration.
- .3 Store in original and undamaged containers with manufacturer's seals or labels intact.
- .4 Store materials subject to damage from severe climatic changes in a

climate-controlled, weatherproof enclosure.

- .5 Store paints and freezable materials in a moderately heated and ventilated room.

5 WARRANTIES AND BONDS

- .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 the applicable item of work.
- .4 Start date for all warranties are to be the Date of Substantial Performance, regardless if put into use.
- .5 Verify that documents are in proper form, contain full information, and are notarized. Co-execute submittals when required.
- .6 Retain warranties and bonds until time specified for submittal.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Labour, Products, equipment and services necessary for demolition and removals Work in accordance with the Contract Documents.
- .2 Work included: Requirements for demolishing, salvaging and removing wholly or in part the various items designated on the drawings or required to be removed or partially removed for the receipt of the Work of this Contract, including not necessarily limited to:
 - .1 Alteration and renovations to existing building.
 - .2 Cutting and removing of walls, curtain wall system, doors and frames, in the existing buildings as indicated on Drawings.
 - .3 Patching, making good openings and chases in walls, curtain wall system, doors and frames, including the supply and installation of lintels, channels and finishes.
 - .4 Removal of rubbish, debris, demolished fixtures, fitments and items not scheduled to remain the Owner's property, resulting from the demolition and preparatory work.
 - .5 Dust control during the operations of the work of this Section.
 - .6 Removal shall mean removal from site and safe disposal in a legal manner.
 - .7 All additional items for demolitions and removal as per Drawings.

1.2 **REFERENCES**

- .1 CSA S350-M, Code of Practice for Safety in Demolition of Structures.
- .2 OPSS, Ontario Provincial Standard Specification.

1.3 **SUBMITTALS**

- .1 Where required by Authorities having jurisdiction, submit a Fire Plan to local fire department for review and approval.
- .2 Submit shop drawings, diagrams and details in accordance with the Conditions of the Contract.
- .3 30 calendar days prior to start of demolition and removals work, submit for review, drawings, diagrams or details showing sequence of disassembly work and shoring of supporting structures in accordance with authorities having jurisdiction.
- .4 Submit for approval, a plan showing impacts, interruptions and delays to Owners operations.
- .5 Submit Dust Control Plan conforming to requirements of the City of Barrie's Public Health Services.

- .6 Have submissions signed and sealed by Professional Engineer licensed in Province of Ontario.
- .7 Submit to Consultant, details of where rubble, debris and other materials are to be disposed or reused. Include each disposal/reuse site location, operator's name and business address, type of license under which site operates, and criteria used by site to assess suitability of rubble, debris and other materials for disposal.
- .8 Give notice to Utility Authorities controlling services and appurtenances which will be affected by demolition work.

1.4 **QUALITY ASSURANCE**

- .1 Prepare waste audits, waste reduction workplans, source separation programs and recycling programs as required by jurisdictional authorities and update programs and implement such programs as required.
- .2 Perform the work of this section in accordance with the 'Environmental Protection Act' including Ontario Regulation 102 and the 'Environmental Assessment Act' including Ontario Regulation 103.
- .3 Conform to Fire Code, Regulation under the Fire Marshals Act.
- .4 The demolition contractor must engage a registered professional engineer who holds a certificate of authorization and an appropriate level of liability insurance to prepare demolition procedures.
- .5 As part of the contract requirements, the engineer for the demolition contractor should be required to sign the general review commitment required by city building departments.

1.5 **SITE CONDITIONS**

- .1 Interruptions to Owners operations will not be permitted.
- .2 Take over structures to be demolished based on condition on date that Tenders close.

2 Products

2.1 **MATERIALS**

- .1 All materials requiring removal shall become the Contractor's property and shall be removed and disposed of from the site, as the work progresses, unless indicated otherwise.

3 Execution

3.1 **GENERAL**

- .1 Clean up rubble and debris, resulting from work promptly and dispose at end of day or place in waste disposal bins. Empty bins on regular basis.
- .2 Stockpiling of rubble, debris, and surplus Products on Site will not be permitted.
- .3 Communicate Dust Control Plan procedures to all appropriate personnel on site and their head offices and due diligence measures to be maintained to control all fugitive emissions.
- .4 Take precautions to guard against movement, settlement or collapse of adjacent services, sidewalks, driveways, or trees. Be liable for such movement, settlement or collapse caused by failure to take necessary precautions. Repair promptly such damage when ordered.

3.2 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of work of this Section means acceptance of existing conditions.
- .2 Examine adjacent structures and other installations prior to commencement of demolition and removals work.

3.3 **PRESERVATION OF REFERENCES**

- .1 Record location and designation of survey markers and monuments located within demolition area, prior to removal. Store and restore markers and monuments upon completion of Work or relocate as directed by Consultant.

3.4 **PROTECTION**

- .1 Provide, erect and maintain required hoarding, sidewalk sheds, catch platforms, lights and other protection around Site before commencing work. Maintain such areas free of snow, ice, mud, water and debris. Lighting levels shall be equal to that prior to erection.
- .2 Prevent movement or damage of adjacent structures, and parts of existing structure to remain. Supply and install bracing, and shoring as required. Make good damage caused by demolition to acceptance of Consultant.
- .3 Protect adjacent structures and property against damage which might occur from falling debris or other causes. Repair or replace damage caused from work of this Section to acceptance of Consultant.

- .4 Do not interfere with use of adjacent structures and Work areas. Maintain free, safe passage to and from adjacent structures and Work areas.
- .5 Take precautions to support affected structures. If safety of structure being demolished, adjacent structures or services are endangered, cease demolition operations and take necessary action to support endangered item. Immediately inform Consultant. Do not resume demolition until reasons for endangering have been determined and corrected and action taken to prevent further endangering.
- .6 If movement or settlement occurs, install additional bracing and shoring as necessary and make good damage to acceptance of Consultant.
- .7 Hang tarpaulins where debris and other materials are lowered. Build in around openings with wood and plywood at locations used for removal of debris and materials.
- .8 Prevent debris from blocking surface drainage system, elevators, mechanical, and electrical systems which are required to remain in operation.
- .9 Pay particular attention to prevention of fire and elimination of fire hazards which would endanger Work or adjacent structures and premises.
- .10 Supply and install adequate protection for materials to be re-used, set on ground and prevent moisture pick-up. Cover stockpiles of materials with tarpaulins.
- .11 Close off access to areas where demolition is proceeding by barricades and post warning signs.
- .12 Supply, install and maintain legal and necessary barricades, guards, railings, lights, warning signs, security personnel and other safety measures, and fully protect persons and property.
- .13 Dust protection:
 - .1 Perform dust control procedures in accordance with approved Dust Control Plan and work of this Section.
 - .2 Clean water to be applied to hard and soft surfaces and on open excavation faces on Site daily to eliminate dust.
 - .3 Roadways and sidewalks to be cleaned daily or as required.
 - .4 A designated truck loading area on granular material or existing asphalt to be used to mitigate tracking of potentially contaminated soil and demolition debris off Site. Contaminated loading points to be cleaned or re-established.
 - .5 Loaded vehicles leaving Site to be cleaned of loose soil and debris with power washing or alternative method.
 - .6 Trucks loaded with indigenous soil or demolition debris to be covered by tarps or attached screens.
- .14 Blasting is not permitted.

3.5 PREPARATION

- .1 Disconnect and/or re-route electrical data, communication and telephone service lines entering structures to be demolished. Remove abandoned lines as indicated on Contract Drawings. Post warning signs on electrical lines and equipment which is required to remain energized.
- .2 Disassemble and remove mechanical equipment, ductwork and piping complete with supports and associated components.
- .3 Do not disrupt active or energized utilities designated to remain undisturbed.
- .4 Perform rodent and vermin control to comply with health regulations.

3.6 DEMOLITION

- .1 Perform demolition with extreme care. Confine effects of demolition to those parts which are to be demolished.
- .2 Perform work and prevent inconvenience to persons outside those parts which are to be demolished.
- .3 Carry out demolition in accordance with the requirements of CSA S350-M.
- .4 Demolish parts of structure to permit remedial work as indicated.
- .5 Demolition shall proceed safely in systematic manner from roof to grade and as necessary to accommodate remedial work indicated. Work on each floor level shall be complete before commencing work on supporting structure and safety of its supports are impaired. Parts of building which would otherwise collapse prematurely shall be securely shored. Walls and piers shall not be undermined.
- .6 Do not overload wall with accumulations of material or debris or by other loads.
- .7 Perform work to minimize dusting. Keep work area wetted down with fog sprays to prevent dust and dirt rising. Supply and install temporary water lines and connections that may be required. Upon completion, remove installed temporary water lines. Use covered chutes, water down.
- .8 Do not sell or burn materials on Site.
- .9 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as Work progresses.
- .10 At end of day's work, leave Work in safe condition with no part in danger of toppling or falling. Protect interiors of parts not to be demolished from exterior elements.
11. Where doors are scheduled to be removed, include removal of door frames and door hardware.

12. Demolish all other items indicated or required.

3.7 **RECYCLING**

- .1 Whenever possible, all materials shall be recycled. Pay all costs for this work.
- .2 Provide detailed reported breakdown indicating the materials dispose/recycled with corresponding weights.
- .3 Deliver to nearest appropriate recycling depot all materials accepted for recycling by Authorities having jurisdiction over the Place of Work, including but not limited to cardboard, paper, plastic, aluminum, steel, and glass.
- .4 Deliver to nearest appropriate depot all scrap and excess gypsum wallboard for recycling of this material.
- .5 Base building light fixture lamps to be placed on skids and wrapped for recycling and delivered to nearest appropriate recycling depot.

3.8 **DISPOSAL OF MATERIALS**

- .1 Remove from Site, rubble, debris, and other materials that can not be recycled resulting from demolition and removals work in accordance with Authorities having Jurisdiction, except where specified or indicated on Contract Drawings to be reused.
- .2 Conform to requirements of municipality's Works Department regarding disposal of waste materials.
- .3 Materials prohibited from municipality waste management facilities shall be removed from Site and dispose of at recycling companies specializing in recyclable materials.

3.9 **RESTORATION**

- .1 Where demolition removed a structure or installation, rough grade and restore area in accordance with Authorities having Jurisdiction.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Design, labour, Products, equipment and services necessary for the miscellaneous and metal fabrication work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 ASTM A123, Specification for Zinc (Hot Dip Galvanized) Coatings on Iron & Steel Products.
- .2 ASTM A153, Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- .3 ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
- .4 ASTM A653/A653M, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
- .5 CISC/CPMA 1.73a, A Quick-Drying One-Coat Paint for Use on Structural Steel.
- .6 CAN/CSA-G40.20/G40.21-M, General Requirements for Rolled or Welded Structural Quality Steel/ Structural Quality Steels.
- .7 CAN/CSA S16.1-M, Limit States Design of Steel Structures.
- .8 CSA S136.1-M, Commentary on CAN/CSA S136-M, Cold Formed Steel Structural Members.
- .9 CSA W47.1, Certification of Companies for Fusion Welding of Steel Structures.
- .10 CSA W48, Filler Metal and Allied Materials for Metal Arc Welding.
- .11 CSA W59-M, Welded Steel Construction (Metal Arc Welding).
- .12 CAN/CSA W117.2-M, Safety in Welding, Cutting and Allied Processes.
- .13 CAN/CGSB 1.40-M, Primer, Structural Steel, Oil Alkyd Type.
- .14 CGSB 85-GP-16M, Painting Galvanized Steel.
- .15 Steel Structures Painting Council (SSPC), Steel Structures Painting Manual, Vol. 2.

1.3 **DESIGN REQUIREMENTS**

- .1 Design details and connections, where not shown on Drawings, in accordance with CAN/CSA-S16.1 and CSA S136.1.

1.4 SUBMITTALS

- .1 Shop drawings:
 - .1 Submit shop drawings for fabrication and erection of miscellaneous and metal items in accordance with Section 01 30 00 indicating:
 - .1 Materials, core thicknesses, class of finish (AMP 555), connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - .2 Steel stairs, handrails and guards, ladders, gas meter enclosures.
 - .3 Ensure shop drawings are of one uniform size and based on field measurements.

1.5 QUALITY ASSURANCE

- .1 Retain a Professional Engineer, licensed in the Province of Ontario, with experience in work of comparable complexity and scope, to perform the following services as part of the work of this Section:
 - .1 Design metal fabrication items that are required to resist live, dead, lateral, wind, or seismic loads.
 - .2 Review, stamp, date and sign shop drawings.
- .2 Workmanship: Fabricate work of this Section to meet the required class of workmanship indicated below in accordance with AMP 555, Section 8.
 - .1 Class 1: for use on direct exposed to view fabricated items:
 - .1 Exposed surfaces are finished smooth with pits, mill marks, nicks, burrs, sharp edges, and scratches filled or ground off. Defects should not show when painted, polished, or finished.
 - .2 Welds should be concealed where possible. Exposed welds are ground to small radius with uniform sized cove unless otherwise noted.
 - .3 Distortions should not be visible to the eye.
 - .4 Exposed joints are fitted to a hairline finish.
- .3 Execute welding by firms certified in accordance with CSA W47.1 Division 1 or 2.1. Ensure welding operators are licensed per CSA W47.1 for types of welding required by Work.
- .4 Perform stainless steel work in accordance with NAAMM, Code of Standard Practice for the Metal Industry, Workmanship, Class 1.

2 Products

2.1 MATERIALS

- .1 General:
 - .1 All materials under work of this Section, including but not limited to, primers and paints are to have low VOC content limits.
 - .2 Unless detailed or specified herein, standard products will be acceptable if construction details and installation meet intent of Drawings and Specifications.

- .3 Include all materials, products, accessories, and supplementary parts necessary to complete assembly and installation of work of this Section.
- .4 Incorporate only metals that are free from defects which impair strength or durability, or which are visible. Install only new metals of best quality, and free from rust or waves and buckles, and that are clean, straight, and with sharp defined profiles.
- .2 Structural shapes, plates, and similar items: CAN/CSA-G40.20/G40.21-M, Grade 350W. Hollow structural sections: CAN/CSA-G40.20/G40.21-M, Grade 350W, Class H.
- .3 Galvanized sheet steel: ASTM A653/A653M Grade A, Z275 Commercial Quality zinc coating, size and shape as shown.
- .4 Welding materials: CSA W48 and CSA W59-M.
- .5 Fasteners: Conforming to ASTM A307, Grade A, in areas not exposed to view, use unfinished bolts with hexagon heads and nuts. In areas exposed to view, use bolts, nuts, washers, rivets, lock washers, anchor bolts, machine screws and machine bolts Z275 zinc coated in accordance with ASTM A653/A653M. Supply bolts of lengths required to suit thickness of material being joined, but not projecting more than 6 mm beyond nut, without the use of washers.
- .6 Primer paint: CAN/CGSB-1.40-M or CPMA 1.73a.
- .7 Galvanized primer paint: Inorganic zinc rich primer. For use on galvanized fabrications where touch up is to remain unpainted in finished work; Carbozinc 11WB by Carboline Company, Catha-Coat 305 by Devoe Coatings or Zinc Clad XI by Sherwin Williams.
- .8 Drilled inserts: Mega by ITW Construction Products or HSL by Hilti Inc. heavy-duty anchors, sizes as shown.
- .9 Adhesive anchor system: 'HIT HY 200 Injectable Mortar with Hilti HAS Stainless Steel Anchor Rod System' by Hilti Ltd. or approved alternative by ITW Construction Products, complete with all components required for a complete installation.

2.2 **FABRICATION**

- .1 Verify dimensions of existing Work before commencing fabrications and report any discrepancies to the Consultant.
- .2 Fit and assemble work in shop where possible. Execute work in accordance with details and reviewed shop drawings.
- .3 Use self-tapping shake-proof screws on items requiring assembly by screws or as indicated. Use screws for interior metal work. Use welded connections for exterior metal work unless otherwise found acceptable by the Consultant.
- .4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush. Seal exterior steel fabrications against corrosion in accordance with CAN/CSA S16.1-M.

- .5 Execute shop welding to requirements specified .
- .6 Carefully make and fit details. Take special care with exposed finished work to produce a neat and correct appearance to the Consultant's acceptance.
- .7 Assemble members without twists or open joints.
- .8 Correctly size holes for connecting work of other trades where such can be determined prior to fabrication. Where possible, show holes on shop drawings. Place holes not to cause appreciable reduction in strength of member.
- .9 Draw mechanical joints to hairline tightness and seal countersunk screw and access holes for locking screws with metal filler where these occur on exposed surfaces.

2.3 **FABRICATED ITEMS**

- .1 Refer to Drawings for details of metal fabrication work and related items not specifically listed in this Section.
- .2 Where work is required to be built into work of other Sections supply such members to respective Sections.
- .3 Provide metal fabrication items indicated below and items not indicated to be supplied under other Sections. The following items includes miscellaneous and metal fabrication including but not limited to the items listed below.
- .4 Miscellaneous steel brackets, supports and angles
 - .1 Supply and install or supply for installation by trades responsible, all loose steel brackets, supports and angles where indicated, except where such brackets, supports and angles are specified under work of other Sections. Drill for countersunk screws, expansion anchors and anchor bolts.
 - .2 Unless otherwise specified, prime paint for interior installation; galvanized finish for exterior installation.

2.4 **ANCHORS AND FASTENING**

- .1 Use weld studs of size not larger than 10 mm for attaching miscellaneous materials and equipment to building steel. If weight of item requires larger fasteners use clips or brackets and secure by welding or through bolting.
- .2 Use self drilling expansion type concrete anchors for attaching to masonry and concrete
- .3 Do not secure items to steel deck.
- .4 Use steel beam clamps of two bolt design to transmit load to beam web. Do not use C and I clamps.
- .5 Mount vertical access ladders in accordance with OBC.

2.5 WELDING

- .1 Perform welding by electric arc process.
- .2 Execute welding to avoid damage or distortion to Work. Execute welding in accordance with following standards:
 - .1 CSA W48 - for Electrodes. If rods are used, only coated rods are allowed.
 - .2 CSA W59-M and CSA W59S1-M for design of connections and workmanship.
 - .3 CAN/CSA W117.2-M - for safety.
- .3 Thoroughly clean welded joints and expose steel for a sufficient distance to perform welding operations. Finish welds smooth. Supply continuous and ground welds which will be exposed to view and finish paint.
- .4 Test welds for conformance and remove work not meeting specified standards and replace to Consultant's acceptance.

2.6 SHOP PAINTING

- .1 Clean steel to SSPC SP6 and remove loose mill scale, weld flux and splatter.
- .2 Shop prime steel with one coat of primer paint to dry film thickness of 0.07 mm. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 deg C. Paint items under cover and leave under cover until primer is dry. Follow paint manufacturer's recommendations regarding application methods, equipment, temperature, and humidity conditions.
- .3 Shop prime galvanized steel in accordance with CGSB 85-GP-16M.
- .4 Clean but do not paint surfaces being welded in field.
- .5 Do not paint surfaces embedded in concrete, but clean as if they were to be primed.
- .6 Do not prime steel to be fireproofed or to receive intumescent paint coating.
- .7 Do not prime machine finished surfaces, but apply an effective anti-rust compound.
- .8 Take precautions to avoid damage to adjacent surfaces.

2.7 HOT DIP GALVANIZING

- .1 After fabrication, hot dip galvanize specific miscellaneous steel items as indicated. After galvanizing, plug relief vents air tight with appropriate aluminum plugs as suitable and required for intended metal fabricated item. Straighten shapes and assemblies true to line and plane after galvanizing. Repair damaged galvanized surfaces with zinc rich primer in accordance with manufacturer's printed directions.

- .2 Hot-dip galvanize members in accordance with requirements of the following ASTM, with minimum coating weights or thicknesses as follows:
 - .1 Rolled, pressed and forged steel shapes, plates, bars and strips: ASTM A123; average weight of zinc coating per square/metre of actual surface, for 4.8 mm and less thickness members 600 g/m² for 6 mm and heavier members 640 g/m².
 - .2 Iron and steel hardware: ASTM A153; minimum weight of zinc coating, in ounces per square foot of surface, in accordance with ASTM A153, Table 1 for the various classes of materials used in the Work.

3 Execution

3.1 **EXAMINATION**

- .1 Examine previously installed Work, upon which this Section depends, verify dimensions and condition of existing Work, and coordinate repairs, alterations, and rectification if necessary. Commencement of work of this Section is deemed to signify acceptance of existing, prior conditions.
- .2 Obtain Consultant's written approval prior to field cutting or altering of structural members.

3.2 **ERECTION**

- .1 Install metal fabrications in accordance with reviewed shop drawings and manufacturer's written instructions.
- .2 Fit joints and intersecting members accurately. Make work in true planes with adequate fastenings. Build and erect work plumb, true, square, straight, level and accurate to sizes detailed, free from distortion or defects detrimental to appearance or performance.
- .3 Perform drilling of concrete and steel as required to fasten work of this Section.

3.3 **TOUCH UPS**

- .1 Paint bolt heads, washers, nuts, field welds and previously unpainted items. Touch up shop primer damaged during transit and installation, with primer to match shop primer.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Labour, Products, equipment and services necessary for sprayed foam insulation work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 CAN/ULC S705.1, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
- .2 CAN/ULC S705.2, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.

1.3 **SUBMITTALS**

- .1 Product data:
 - .1 Submit duplicate copies of manufacturer's Product data in accordance with the Conditions of the Contract:
 - .1 Performance criteria, characteristics, and limitations.
 - .2 Product transportation, storage, handling and installation requirements.
- .2 Shop drawings:
 - .1 Submit shop drawings in accordance with the Conditions of the Contract:
 - .1 Elevations, sections, materials, details of joint conditions, including door, window, entrance framing, flashings, and roof parapet connection.
- .3 Certificates: Submit the following certificates in accordance with the Conditions of the Contract:
 - .1 Applicator's current certificate of approval by CUFCA/NECA or BASF Canada's training program.
 - .2 Applicator's current certificate of approval from material manufacturer.

1.4 **QUALITY ASSURANCE**

- .1 Perform work of this Section by a company that has a minimum of five years proven experience in installations of similar size and nature.
- .2 Contractor to be a certified member of the Canadian Urethane Foam Contractors Association/ National Energy Conservation Association (CUFCA/NECA) or be licensed under the BASF Canada Quality and Training Program "Raising Performance to New Heights" and in accordance with CAN/ULC S705.2 installation standard.
- .3 Provide quality assurance testing in accordance with CAN/ULC S705.2. Record daily results in a log book for Consultant's review.

- .4 Provide adhesion tests on membranes, in accordance with manufacturer's written instructions, at the perimeters of all openings. If the project comprises more than 10 openings, adhesion tests should be conducted on 15% of them. For jobs comprising 10 or fewer openings, 30% of these should undergo adhesion tests. Adhesion tests should be performed on the transition membranes at every tenth column or beam.
- .5 Mock-up:
 - .1 Construct mock-up of 3 m² minimum, of spray-in-place foam insulation to thickness as indicated on drawings, including one inside corner and one outside corner.
 - .2 Arrange for Consultant's review and acceptance, allow 24 hours before proceeding with work.
 - .3 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of Work if accepted by Consultant. Remove and dispose of mock-ups which do not form part of Work.

1.5 **SITE CONDITIONS**

- .1 Do not install work of this Section outside of following environmental ranges without Consultant's and Product manufacturer's written acceptance:
 - .1 Ambient air and surface temperature: 5°C to 40°C.
 - .2 Relative Humidity: Above 85%.
- .2 Supply and install temporary protection and facilities to maintain Product manufacturer's, and above specified environmental requirements for 48 hours before, during, and 48 hours after installation.

2 **Products**

2.1 **MATERIALS**

- .1 All materials under work of this Section, including but not limited to, primers and sealants are to have low VOC content limits.
- .2 Sprayed foam insulation: CAN/ULC S705.1, closed cell, medium density, polyurethane based, and utilizing an HFO blowing agent; 'Walltite CM01' by BASF, 'Sealtite One' by Carlisle, or 'Heatlok Soya HFO' by Huntsman Building Solutions.
- .3 Primers: As recommended by sprayed foam insulation manufacturer.

3 **Execution**

3.1 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of work of this Section means acceptance of existing conditions.

3.2 **PREPARATION**

- .1 Verify substrate surfaces are solid, free from surface water, frozen matter, dust, oil, grease, scaling or laitance, projections and any other foreign matter detrimental to performance. Obtain manufacturer's approval of substrate in writing, submit copy to Consultant.
- .2 Provide ventilation in area to receive sprayed foam insulation, introducing and exhausting fresh air continuously during and for 24 hours after application.
- .3 Provide temporary enclosures to prevent spray from contaminating air beyond application area, and damage from overspray and dusting on adjacent surfaces.
- .4 Supply and install temporary protection to adjacent surfaces to prevent damage resulting from work of this Section.
- .5 If required, apply primer to substrate surfaces in accordance with manufacturer's written instructions.

3.3 **SPRAY INSULATION**

- .1 Install insulation in accordance with manufacturer's written instructions.
- .2 Apply sprayed foam insulation to thickness indicated on drawings and to provide continuous air retarder in locations indicated on the Drawings. Apply insulation to within 3 mm of thickness indicated on drawings. Provide one measuring pin for every 50 m².
- .3 Insulation thickness greater than 50 mm shall be completed in a minimum of 2 steps.
- .4 Insulation to be continuous, level, plumb and uniform thickness throughout. Insulation shall be free of voids and imbedded foreign materials.

3.4 **INSPECTION AND TESTING**

- .1 Independent Inspection and Testing Consultants will be engaged by the Owner for the purpose of inspecting and/or testing individual portions of the Work

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Labour, Products, equipment and services necessary for firestopping and smoke seals work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 ASTM C303, Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation.
- .2 ASTM C920, Standard Specification for Elastomeric Joint Sealants.
- .3 ASTM C1104, Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
- .4 ASTM E814, Test Method for Fire Tests of Through-Penetration Fire Stops.
- .5 ASTM E2174, Standard Practice for On-Site Inspection of Installed Fire Stops.
- .6 CAN/ULC S102, Surface Burning Characteristics of Building Materials and Assemblies.
- .7 CAN/ULC S114, Standard Method of Test for Determination of Non-Combustibility in Building Materials.
- .8 CAN/ULC S115, Standard Method of Fire Tests of Firestop Systems.
- .9 CAN/ULC S129, Standard Method Of Test For Smoulder Resistance Of Insulation (Basket Method).
- .10 CAN/ULC S702, Thermal Insulation, Mineral Fibre for Buildings.

1.3 **DEFINITIONS**

- .1 Fire Separation: A construction assembly, plane or device, either vertical or horizontal, which is required to prevent the passage of fire and smoke for a prescribed period of time. Proof of compliance to required time rating shall be by ULC, Warnock Hersey (or similar approved) certification or shall be as listed in the Ontario Building Code Supplementary Standard SB-2.
- .2 Smoke Separation: A construction assembly, plane or device, either vertical or horizontal, which is not required to prevent the passage of fire for a prescribed period of time but is required to prevent the passage of smoke. A "Smoke Separation" is also known as a "Fire Separation with No Rating" or a "Zero Hour Rated Separation".

- .3 Non-Rated Separation: A construction assembly, plane or device, either vertical or horizontal, which is not required to prevent the passage of fire for a prescribed period of time and is not required to prevent the passage of smoke.

1.4 **SYSTEM DESCRIPTION**

- .1 Firestopping and smoke seals: ULC or Intertek Testing Services listed Products and systems in accordance with CAN/ULC S115 suitable to actual application and installation conditions.
- .2 Firestop applications that exist for which no ULC or cUL tested system is available through a manufacturer, a manufacturer's engineering judgment derived from similar ULC or cUL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineer judgment drawings must follow requirements set forth by the International Firestop Council.
- .3 Firestop and smoke seal system shall achieve a fire resistance rating and smoke seal rating equal to that of assemblies into which they are installed.
- .4 Provide smoke sealants over firestopping materials or combination smoke seal/firestop seal material to form air tight barriers to retard the passage of gas and smoke.
- .5 Firestopping and smoke seals located at movement joints shall be designed with movement capability.
- .6 Firestopping and smoke seals within mechanical and electrical assemblies shall be provided as part of the work of Divisions 21, 22, 23, 26, 27, and 28 respectively.

1.5 **SUBMITTALS**

- .1 Product data:
 - .1 Submit copies of manufacturer's Product data in accordance with the Conditions of the Contract indicating:
 - .1 Performance criteria, compliance with appropriate cUL or ULC reference standard, characteristics, limitations.
 - .2 Product transportation, storage, handling and installation requirements.
 - .3 Submit firestop and smoke seal manufacturer's Product data for materials and prefabricated devices, including manufacturer's printed installation instructions.
- .2 Shop drawings:
 - .1 Submit shop drawings in accordance with the Conditions of the Contract indicating:
 - .1 Fire rated and smoke sealed systems for each typical application.
 - .2 Construction details, accurately reflecting actual job conditions.
 - .3 ULC or Intertek Testing assembly listing.

- .4 Each floor and wall assembly requiring firestop system with each corresponding ULC firestop system.
- .3 Certification:
 - .1 Submit certified documentation from manufacturer for each worker performing work of this Section.
 - .2 Submit installer's and Product manufacturer's certification verifying compliance with the Contract Documents and conformance with ASTM E814 and CAN/ULC S115.

1.6 **QUALITY ASSURANCE**

- .1 Installers qualifications: Perform work of this Section by a company that has a minimum of five (5) years proven experience in the installation of firestopping and smoke seal work of a similar size and nature and that is approved by manufacturer. Submit to Consultant, applicator's current certificate of approval by the material manufacturer as proof of compliance.
- .2 Manufacturer's direct representative and/or fire protection specialist shall be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures conforming to manufacturer's written recommendations published in their literature and drawing details.
- .3 Pre-construction meetings: Arrange with manufacturer's representative, Contractor, Consultant and Field Engineer to determine responsibility for handling such issues as FT rated partitions, firestop custom details, compatibility, mixed penetrations, and to review installation procedures 48 hours in advance of installation.

1.7 **DELIVERY STORAGE AND HANDLING**

- .1 Deliver materials to Place of Work in manufacturer's unopened containers, containing classification label with labels intact and legible at time of use.
- .2 Do not use damaged or adulterated materials exceeding their expiry date.

1.8 **SITE CONDITIONS**

- .1 Conform to manufacturer's requirements and maintain a minimum temperature of 5° C for a minimum period of 24 h before application, during, and until application is fully cured.
- .2 Maintain sealant at a minimum 18° C for best workability.

2 Products

2.1 **ACCEPTABLE MANUFACTURERS**

- .1 Acceptable manufacturers of rated systems include:
 - .1 3M
 - .2 Hilti Canada Corporation.
 - .3 Specified Technologies Inc. (STI Firestop)
 - .4 Tremco Ltd.
 - .5 Or approved equivalent.

2.2 **GENERAL SYSTEM REQUIREMENTS**

- .1 All materials under work of this Section, including but not limited to, primers and sealants are to have low VOC content limits.
- .2 Do not use Products containing asbestos.
- .3 Firestopping components shall not contain volatile solvents or require special application to protect plastic pipe from firestopping compound.
- .4 Provide smoke seal sealant in following colours:
 - .1 Grey or white in finished areas.
 - .2 Red in unfinished areas.
- .5 Smoke sealant for overhead and vertical joints for floor to be self-levelling and non-sagging sealant.
- .6 Smoke sealant at vertical through penetrations in areas with floor drains shall be waterproof type.

2.3 **MATERIALS**

- .1 Following materials have been provided for convenience. Contractor shall provide complete system with all components and accessories as required for fire resistant and smoke seal installation.
- .2 Firestop sealant: single component, low modulus, silicone rubber, moisture curing sealant to ASTM C920, ULC labelled to CAN/ULC S115.
- .3 Pre-Installed firestop devices for use with non-combustible and combustible pipes, conduit and/or cable bundles penetrating concrete floors and walls.
 - .1 Cast-in place firestop device complete with aerator adaptor when used in conjunction with aerator system. Model CP 680-P by Hilti or approved equivalent.
 - .2 Cast-in place firestop device for use with noncombustible penetrants. Model CP 680-M by Hilti or approved equivalent.
 - .3 Speed sleeve for use with cable penetrations. Model CP 653 by Hilti or approved equivalent.

- .4 Firestop block. Model CFS-BL by Hilti or approved equivalent.
 - .4 Re-penetrable, round cable management devices for use with new or existing cable bundles penetrating walls:
 - .1 Speed sleeve with integrated smoke seal fabric membrane. Model CP 653 by Hilti or approved equivalent.
 - .2 Firestop Sleeve. Model CFS-SL SK by Hilti or approved equivalent.
 - .3 Retrofit sleeve for use with existing cable bundles. Model CFS-SL RK by Hilti or approved equivalent.
 - .4 Gangplate for use with multiple cable management devices. Model CFS-SL GP by Hilti or approved equivalent.
 - .5 Gangplate Cap for use at blank openings in gangplate for future penetrations. Model CFS-SL GP CAP by Hilti or approved equivalent.
 - .5 Firestop insulation: to CAN/ULC S702, Type 2; mineral fibre manufactured from rock or slag, suitable for manual application.
 - .1 Density: Minimum 64 kg/m³ when tested to ASTM C303.
 - .2 Combustibility: Noncombustible to CAN/ULC S114.
 - .3 Melt temperature: >1175 degrees C.
 - .4 Surface burning characteristics: to CAN/ULC S102, maximum flame spread of 0, smoke developed of 0.
 - .5 Moisture Absorption: 0.04 percent when tested to ASTM C1104.
 - .6 Smoulder Resistance: 0.01 percent when tested to CAN/ULC S129.
 - .6 Damming, back-up, supports, and anchorage: In accordance with manufacturer's fire rated systems and to acceptance of authorities having jurisdiction.
 - .7 Primer: As recommended by firestopping sealant manufacturer.
- 3 Execution
- 3.1 **EXAMINATION**
- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of work of this Section means acceptance of existing conditions.
 - .2 Verify that substrates and surfaces to receive firestopping and smoke seals are clean, dry, and frost free.
- 3.2 **PREPARATION**
- .1 Prepare, modify, and adjust void sizes, proportions, and conditions to conform to fire rated and smoke sealed assembly requirements such as assembly opening size and dimensional restrictions.
 - .2 Clean surfaces to remove material detrimental to bond including dust, paint, rust, oil, grease, moisture, frost and other foreign matter to manufacturers recommendations.

- .3 Mask adjacent surfaces to avoid spillage and over-coating of adjacent surfaces.
Remove stains from adjacent surfaces.

3.3 **INSTALLATION**

- .1 Install firestopping and smoke seal systems in accordance with reviewed Shop Drawings, manufacturer's instructions and fire rated assembly to establish continuity and integrity of fire separations.
- .2 Install firestop insulation in compacted thicknesses required by ULC design.
Compress insulation approximately 50 percent.
- .3 Install primers as recommended by firestop and smoke seal Product manufacturers.
- .4 Install temporary forming, damming, back-up as required, remove after materials have achieved initial cure and will resist displacement.
- .5 Install firestop and smoke seal filler in horizontal joints providing 25% compression fit.
- .6 Use resilient, elastomeric firestopping and smoke seal systems in following locations:
 - .1 Openings and sleeves for future use.
 - .2 Penetration systems subject to vibration or thermal movement.
 - .3 Penetration systems in acoustical containment enclosures.
- .7 Trowel and tool exposed firestop and smoke seal. Product surfaces to uniform, smooth finish.
- .8 Seal joints to ensure an air and water resistant seal capable of withstanding compressions and extensions due to thermal wind or seismic joint movement.
- .9 Taped joints will not be acceptable.
- .10 Repair damaged firestopped and smoke sealed surfaces to acceptance of Consultant.
- .11 Identify each firestop and smoke seal penetration assembly with permanent label listing following:
 - .1 Assembly and rating in hours.
 - .2 Date of installation.
 - .3 Installing company's name and telephone number.
- .12 Do not cover materials until full cure has taken place.

3.4 **INSPECTION AND TESTING**

- .1 Inspection of through-penetration firestopping shall be performed in accordance with ASTM E2174 to ensure that firestopping and smoke seals have been installed in accordance with Contract documents and to tested and listed firestop system.

3.5 CLEAN-UP

- .1 Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.
- .2 Remove excess materials and debris immediately after application.

3.6 SCHEDULE OF FIRESTOP AND SMOKE SEAL LOCATIONS

- .1 Following firestop and smoke seal location schedule is included for convenience and may not be complete. Examine Contract Drawings and other specification sections and determine entire extent of work of this Section. Generally provide systems with required fire and smoke ratings at following locations:
 - .1 Gaps at intersections of fire-resistance rated walls and partitions.
 - .2 Control and sway joints in fire-resistance rated walls and partitions.
 - .3 Gaps at top of fire-resistance rated partitions and walls.
 - .4 Penetrations through fire-resistance rated walls and partitions including but not limited to mechanical and electrical services and openings and sleeves for future use.
 - .5 Penetrations through fire-resistance rated floor slabs, ceilings, and roofs.
 - .6 Gaps at edge of floor slabs at exterior walls.
 - .7 Perimeter of retaining angles on rigid ducts greater than 0.012 m², firestopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.
 - .8 Where indicated on drawings.
 - .9 At non-rated assemblies that require a smoke seal.
 - .10 Where required by Ontario Building Code.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Labour, Products, equipment and services necessary for sealant Work in accordance with the Contract Documents.
- .2 Work of this Section does not include sealants in firestopping and smoke sealed assemblies.
- .3 Work of this Section does not include sealant work identified in individual specification sections.

1.2 **REFERENCES**

- .1 ASTM C834, Specification for Latex Sealants.
- .2 ASTM C920, Specification for Elastomeric Joint Sealants.
- .3 ASTM C1330, Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

1.3 **SUBMITTALS**

- .1 Product data: Submit copies of Product data in accordance with the Conditions of the Contract describing type, composition and recommendations or directions for surface preparation, material preparation and material installation.
- .2 Samples:
 - .1 Submit following samples in accordance with the Conditions of the Contract.
 - .1 Two samples of sealant/caulking, for colour selection.
 - .2 Two samples of back-up material and primer for physical characteristics.

1.4 **QUALITY ASSURANCE**

- .1 Qualifications: Work of this Section shall be executed by trained applicators approved by sealant manufacturer and having a minimum of 5 years proven experience.

1.5 **SITE CONDITIONS**

- .1 Do not install materials when ambient air temperature is less than 5 °C, when recesses are wet or damp, or to manufacturer's recommendations.

1.6 **DELIVERY, STORAGE AND HANDLING**

- .1 Arrange delivery of materials in original, unopened packages with labels intact, including batch number, and ensure that on-site storage is kept to a minimum. Do not store materials on site where there exists any danger of damage from moisture, direct sunlight, freezing and other contaminants.

1.7 **EXTENDED WARRANTY**

- .1 Submit a extended warranty for Sealant Work in accordance with General Conditions, except that warranty period is extended to 5 years. Warrant against leakage, cracking, crumbling, melting, shrinkage, running, loss of adhesion and staining adjacent surfaces. Warranty shall be for complete replacement including affected adjacent Work.

2 Products

2.1 **MATERIALS**

- .1 General:
 - .1 All materials under Work of this Section, including but not limited to, primers and sealants are to have low VOC content limits.
 - .2 Use materials as received from manufacturers, without additives or adulterations. Use one manufacturer's Product for each kind of Product specified.
- .2 Sealant **Type 1**: ASTM C920, Type M, Grade NS, Class 50; Multi-Component, polyurethane sealant, in standard colours selected.
 - .1 'DC CWS' by Dow Corning Inc.
 - .2 'Dymeric 240' by Tremco.
 - .3 Or approved alternative by Sika.
- .3 Sealant **Type 2**: ASTM C920, Type S, Grade NS, Class 25; One-Component, polyurethane sealant, in standard colours selected.
 - .1 'DC CWS' by Dow Corning Inc.
 - .2 'Dymonic' by Tremco.
 - .3 'Novalink' by Chemlink Advanced Architectural Products.
- .4 Sealant **Type 3**: ASTM C920, Type S, Grade NS, Class 50; One-part neutral-cure silicone, in standard colours selected.
 - .1 '795 Weather Sealant' by Dow Corning Inc.
 - .2 'Spectrum 2' by Tremco Ltd.
 - .3 Or approved alternative by Sika.
- .5 Sealant **Type 4**: ASTM C920, Type S, Grade NS, Class 50; One-part neutral-cure, low modulus silicone, in standard colours selected.
 - .1 '791 Sealant' by Dow Corning Inc.
 - .2 'Spectrum 3' by Tremco Ltd.
 - .3 Or approved alternative by Sika.

2.2 **ACCESSORIES**

- .1 Primers: Type recommended by material manufacturers for various substrates, primers to prevent staining of adjacent surfaces encountered on project.

- .2 Joint backing: ASTM C1330; Round, solid section, closed cell, skinned surface, soft polyethylene foam gasket stock, compatible with primer and sealant materials, 30 to 50% oversized, Shore A hardness of 20, tensile strength 140 to 200 kPa. Bond breaker type surface.
- .3 Bond breaker: Type recommended by material manufacturers.
- .4 Void filler around the window frames to be one part expanding polyurethane foam.
- .5 Cleaning agents: As recommended by material manufacturer, non-staining, harmless to substrates and adjacent finished surfaces.

2.3 **MIXING**

- .1 Follow manufacturers instructions on mixing, shelf and pot life.

3 Execution

3.1 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of Work means acceptance of existing conditions.

3.2 **PREPARATION**

- .1 Prepare joints to receive sealants to manufacturer's instructions. Ensure that joints are clean and dry and ferrous surfaces are free from rust and oil.
- .2 Clean recesses to receive sealant, to be free of dirt, dust, loose material, oil, grease, form release agents and other substances detrimental to sealant's performance.
 - .1 Remove lacquer or other protective coatings from metal surfaces, without damaging metal finish, using oil-free solvents. Remove rust, mill scale and coatings from ferrous metals by wire brush, grinding or sand blasting.
 - .2 Ensure recess is dry.
 - .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings. Remove incompatible coatings as required.
- .3 Ensure that all materials in contact with sealant are compatible. Test substrate for adhesion.
- .4 Depth of recess: Maintain depth to $\frac{1}{2}$ joint width up to a maximum of 13 mm and not less than 6 mm at centre of joint. For greater depth, use joint backing under. Where recess is less than specified depth, cut back surface of recess to specified recess depth.
- .5 Install polyethylene backing rod in joints 6 mm or more in width. Roll backing rod into joint. Do not stretch or bend backing rod. Install bond breaker to back of recess.
- .6 Prime sides of recess, in accordance with sealant manufacturer's instructions.

- .7 Condition products for use in accordance with manufacturer's recommendations.

3.3 **INSTALLATION**

- .1 Apply sealant immediately after adjoining Work is in condition to receive such Work. Apply sealant in continuous bead using gun with correctly sized nozzle. Use sufficient pressure to evenly fill joint.
- .2 Ensure sealant has full uniform contact with, and adhesion to, side surfaces of recess. Superficial painting with skin bead is not acceptable. Tool sealant to smooth surface, free from ridges, wrinkles, sags, air pockets, embedded impurities, dirt, stains or other defects.
 - .1 At recesses in angular surfaces, finish sealant with flat profile, flush with face of material at each side.
 - .2 At recesses in flush surfaces, finish compound with concave face, flush with face of material at each side.
- .3 Make sealant bead uniform in colour.
- .4 Cure sealants in accordance with sealant manufacturer's instructions. Do not cover up sealants until proper curing has taken place.
- .5 Immediately remove excess compound or droppings which would set up or become difficult to remove from adjacent finished surfaces, using recommended cleaners, as work progresses. Do not use scrapers, chemicals or other tools which could damage finished surfaces. Remove defective sealant.
- .6 Clean recesses and re-apply sealant.
- .7 Remove masking tape immediately after joints have been sealed and tooled.

3.4 **CLEANING**

- .1 Clean surfaces adjacent to joints, remove sealant smears or other soiling resulting from application of sealants. At metal surfaces, remove residue. Do not mar or damage finishes on materials adjacent to joints. Repair or replace marred or damaged materials.

3.5 **SCHEDULE OF LOCATIONS**

- .1 Following sealant location schedule is included for convenience and may not be complete. Examine Contract Drawings and other specification sections and determine entire extent of Work of this Section. Generally seal following locations:
 - .1 Concrete, masonry, wood and stone to metal.
 - .2 Wood to masonry, concrete and stone.
 - .3 Metal to metal.
 - .4 All dissimilar materials.
- .2 Sealant **Type 1 or Type 2:**
 - .1 Interior joints between dissimilar materials.
 - .2 Interior joints at perimeter of metal door and window frames.

- .3 Sealant **Type 3:**
 - .1 Glass to glass joints.
 - .2 Glass to metal joints.
 - .3 Metal to metal curtain wall joints.

- .4 Sealant **Type 4:**
 - .1 Exterior joints between dissimilar building veneer materials.
 - .2 Exterior control joints in building veneers.
 - .3 Exterior joints at perimeter of all door and window frames.
 - .4 Exterior joints in metal panel systems.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Design, labour, Products, tool, equipment and services necessary for Aluminum Work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 AAMA 611, Voluntary Standards for Anodized Architectural Aluminum.
- .2 AAMA CW-10, Care and Handling of Architectural Aluminum from Shop to Site.
- .3 CAN/CSA-A440-M/A440.1-M, Windows / User Selection Guide to CSA Standard CAN/CSA A440-M Windows.
- .4 CSA A440/A440.1, Windows, Special Publication.
- .5 ANSI H35.1M, Alloy and Temper Designation Systems for Aluminum (Metric).
- .6 ASTM A167, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- .7 ASTM B209M, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .8 ASTM B221M, Specification for Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles and Tubes.
- .9 ASTM C920, Specification for Elastomeric Joint Sealants.
- .10 ASTM E283, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- .11 ASTM E330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .12 ASTM E331, Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
- .13 ASTM F738M, Specification for Stainless Steel Metric Bolts, Screws, and Studs.
- .14 CAN/CGSB 1.108-M, Bituminous Solvent Type Paint.
- .15 CAN/CGSB 79.1-M, Insect Screens.
- .16 CAN/ULC S702, Thermal Insulation, Mineral Fibre, for Buildings.

1.3 DEFINITION(S)

- .1 Aluminum Work: Shall mean aluminum curtainwall, windows, entrances, vestibules, suspended cross, screens, doors, and framing mentioned in Part 2 of this Specification Section.

1.4 DESIGN REQUIREMENTS

- .1 Design Aluminum Work in accordance with following Climatic Design Data for Clarington contained in the Ontario Building Code:
 - .1 Design temperature: January 1%, July 2 1/2% .
 - .2 Hourly wind pressures: 1 in 50 year occurrence.
- .2 Design Aluminum Work to accommodate following without producing detrimental effect:
 - .1 Cyclic 40°C daily thermal swing of components.
 - .2 Cyclic, dynamic loading and release of loads such as wind loads.
 - .3 13 mm vertical deflection in supporting structure and movement of supporting structure due to live, dead load, and creep or deflections, seismic load, sway displacement and similar items.
- .3 Design to prevent accumulation of condensate on interior side of Aluminum Work framing under the following service conditions:
 - .1 Interior temperature: 25°C.
 - .2 Exterior temperature: -25°C.
 - .3 Interior RH: 35%.
- .4 Design complete aluminum window systems, including glazing, to meet the following performance criteria:
 - .1 U-factor: Maximum as indicated.
 - .2 SHGC: Maximum as indicated.
- .5 Design complete aluminum entrance door systems, including glazing, to meet the following performance criteria:
 - .1 U-factor: Maximum as indicated.
 - .2 SHGC: Maximum as indicated.
- .6 Design windows in accordance to AAMA/WDMA/CSA -101/I.S.2/ A440, to the following performance levels:
 - .1 Performance class: CW.
 - .2 Minimum performance grade (PG): 30.
 - .3 Minimum positive design pressure: 1440 Pa.
 - .4 Minimum negative design pressure: - 1440 Pa.
 - .5 Minimum water penetration test pressure: 260 Pa.
 - .6 Minimum air infiltration/exfiltration: A2.
 - .7 Condensation resistance: I57
- .7 Restrict air infiltration/exfiltration, through Aluminum Work in accordance with ASTM E283 at pressure differential as indicated:
 - .1 Curtainwalls and entrance assemblies: 0.0003 m³/s m² at differential of 300 Pa.
 - .2 Doors (per door): 2.78 m³/h m per linear metre of crack at differential of 75 Pa.

- .8 Design and detail controlled drainage path to actively discharge water, which enters into or forms within Aluminum Work, to exterior; prevent accumulation or storage of water within Aluminum Work. Prevent water from entering interior when tested in accordance with ASTM E331.
- .9 Design and detail air barrier, vapour retarder, and rainscreen products and assemblies into continuous and integrated Aluminum Work envelope. Optimize Aluminum Work design to align envelope layers and to minimize thermal bridges.
- .10 Prevent deflection and permanent or progressive glazing displacement. Restrict horizontal and vertical mullion deflection to less than $L/175$ and 19 mm maximum for heights under 4115 mm and $L/240$ and 25 mm maximum for heights over 4115 mm.
- .11 When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span in accordance with ASTM E330.
- .12 Design anchorage inserts for installation as part of other Sections of Work. Design anchorage assemblies to accommodate construction and installation tolerances.
- .13 Provide all reinforcing within aluminum members as required by design and OBC to provide structurally sound assembly. In any case, mullion size shall not be increased due to provision of reinforcing.
- .14 Design Aluminum Work and connections to substrate where the bottom of the Aluminum Work extends to a point below 1070 mm above finished floor level and separates a floor level from an adjacent interconnected space to withstand the required guard and handrail loads in accordance with the OBC and applicable local regulations. When requested by Consultant, provide a letter signed and sealed by a Professional Engineer certifying that the Aluminum Work conforms to the OBC requirements.
- .15 Design operable windows within reach of occupants with limiting stops conforming to requirements of OBC.
- .16 Design Aluminum Work to support weight of supported items such as exterior signage in accordance with Section 10 14 19.

1.5 **SUBMITTALS**

- .1 Shop drawings:
 - .1 Submit shop drawings in accordance with Section 01 30 00 indicating:
 - .1 Plans, sections, details, type of extrusions, profiles, finishes, panels, spandrels, operating components, doors, related flashings, closures, fillers, and end caps, and sealants.
 - .2 Suspended cross and support framing.
 - .3 Products and glazing types.
 - .4 Anchorage inserts, system installation tolerances.
 - .5 Section and hardware reinforcement, anchorage, assembly fixings.

- .6 Detailing, locations, and allowances for movement, expansion, contraction.
- .7 Path of cavity drainage and air pressure equalization.
- .2 Samples:
 - .1 Submit two samples of following in accordance with Section 01 30 00.
 - .1 250 mm long samples of each type of extrusion and finish.
 - .2 250 x 200 mm samples of insulating glass unit.
 - .3 One complete corner detail of door frame, glazing, and finish for each door type.
 - .4 Each door hardware item for Consultant's approval.
 - .5 250 x 200 mm sample of aluminum panel.
 - .6 200 x 200 mm sample of insect screen for operable windows for Consultant's approval of fibreglass mesh.
- .3 Reports:
 - .1 Submit substantiating engineering data, and independent test results of pre-tested, Aluminum Work to substantiate compliance with the design criteria including air leakage and water penetration conforming to ASTM E283 and ASTM E331.
 - .2 Engineering data demonstrating compliance with test procedures outlined in AAMA 501 including as a minimum air leakage resistance, static pressure water penetration resistance, dynamic pressure water penetration resistance, wind load resistance, vertical live load deflection movement and lateral (horizontal) movement, and condensation resistance.
 - .3 Submit documentation to substantiate ten years of experience in Aluminum Work manufacture and installation.
- .4 Close-out submittals: Submit Aluminum Work data for incorporation into the Operations and Maintenance Manual as part of Section 01 78 00.

1.6 **QUALITY ASSURANCE**

- .1 Retain a Professional Engineer, licensed in Province of Ontario, with experience in Aluminum Work of comparable complexity and scope to perform the following services as part of the Work of this Section:
 - .1 Design of Aluminum Work.
 - .2 Review, stamp, and sign shop drawings.
 - .3 Conduct on-Site inspections and prepare and submit inspection reports. Number and frequency of inspection to be sufficient to satisfy Engineer that Aluminum Work is being fabricated and installed in accordance with reviewed shop drawings and design intent.
- .2 Mock-up:
 - .1 Fabricate, deliver, and erect one, full scale mock-up of each type of Aluminum Work, in location acceptable to Consultant.
 - .2 Demonstrate full range of Products, finishes, textures, quality of fabrication, and workmanship.
 - .3 Mock-up may form part of final Work, if acceptable to Consultant. Remove and dispose of mock-ups which do not form part of Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Handle Aluminum Work in accordance with AAMA CW-10.
- .2 Protect aluminum surfaces with strippable coating. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather. Do not remove before final cleaning of building.

1.8 EXTENDED WARRANTY

- .1 Submit a extended warranty for Aluminum Work in accordance with General Conditions, except that warranty period is extended to 10 years.
 - .1 Warrant against failure to meet the design criteria and requirements such as interior leakage, insulating glass unit failure, finish degradation, frame condensation.
 - .2 Coverage: Complete replacement including affected adjacent Work.
- .2 Glazing:
 - .1 Provide a 10 year warranty, commencing from date of Substantial Performance, against defects in the insulating glass units and warrant them to be free from material obstruction of vision as a result of dust or film formation on the internal glass surfaces by any cause, under normal design conditions. Warrant the following:
 - .1 The insulating glass units shall be free from condensation, fogging material obstruction of vision as a result of dust or film formation on the internal glass surfaces by any cause under design conditions.
 - .2 The insulating glass units shall not change their mechanical design properties and shall not in any way deteriorate, degrade, delaminate or change their visual appearance.
 - .3 The glass units will not break due to thermal shock and temperature differential due to inherent glass faults, other than extrinsic glass breakage.
 - .4 Internal fogging shall be deemed to occur when light transmission of the glass is reduced by 5% in any 50 mm x 50 mm area.
 - .5 Failure will be deemed to occur when the internal dew point exceeds -40oC in a 21oC ambient temperature (when tested in accordance with ASTM E576).
 - .2 Warrant that glazing work is water and weather tight and free from distortion; that glazing materials will not deteriorate from exposure to the atmosphere and weather, will not be displaced, and will be free from permanent deformation under load; and that glass and insulating glass units will not be broken, cracked or scratched by causes resulting from defects in material, workmanship or design of glazing installation.
 - .3 Cracked or scratched glass, shrinking, cracking, staining, hardening, sagging of glazing materials; loosening or rattling of glass; and leaking of glazed joints will be considered defective work.
 - .4 Warranty shall provide for the removal of defective Products, replacement with new Products conforming to the specifications, and restoration of work damaged by removal and replacement including labour and installation costs.

2 Products

2.1 **ACCEPTABLE MANUFACTURER(S) AND SYSTEM(S)**

- .1 Curtain wall: 'ThermaWall 2600 Series' by Alumicor Limited, '1600 U.T. Curtainwall' by Kawneer Company Canada Limited, or approved alternative by US Aluminum (C.R. Lawrence) or Windspec Inc. or Commdoor Aluminum.
- .2 Fixed windows: 'RainBlade 1970 Series' by Alumicor Limited, '518 Isoport' by Kawneer Company Canada Limited, or approved alternative by Aerloc or US Aluminum (C.R. Lawrence) or Windspec Inc. or Commdoor Aluminum.
- .3 Operable windows: 'UniVent 1350' by Alumicor Limited, '526 Series' by Kawneer Company Canada Limited or approved alternative by US Aluminum (C.R. Lawrence) or Windspec Inc. or Commdoor Aluminum.
- .4 Exterior entrance system:
 - .1 Aluminum entrance framing: 'Flushglaze BF 3400' by Alumicor Limited, '451T Series' by Kawneer Company Canada Limited, or approved alternative by US Aluminum (C.R. Lawrence) or Windspec Inc. or Commdoor Aluminum.
 - .2 Aluminum doors: 'ThermaPorte 7700' by Alumicor Limited, or approved alternative by Kawneer Company Canada Limited or US Aluminum (C.R. Lawrence) or Windspec Inc. or Commdoor Aluminum.

2.2 **MATERIALS**

- .1 All materials under Work of this Section, including but not limited to, sealants are to have low VOC content limits.
- .2 Aluminum extrusions and channels: ASTM B221 and ANSI H35.1 AA6063 alloy, T6 temper.
 - .1 Profile and dimensions: Refer to Contract Drawings.
 - .2 Thermal breaks in frame members: Vertically aligned with glazing.
- .3 Aluminum sheet: ASTM B209 and ANSI H35.1 AA1100 aluminum alloy, H14 temper, minimum 1.29 mm for sheets less than 610 mm wide and minimum 2.05 mm for sheets of a greater dimension.
- .4 Reinforcements and anchors: ASTM A167, Type 304 to AISI No. 2B finish. Size as shown.
- .5 Glass and glazing materials: As specified in Section 08 80 00.
- .6 Spandrel panel airseal backpan: ASTM A653/A653M; 0.9 mm thick, Z275 galvanized steel sheet.

- .7 Airseal and Aluminum work sealant: ASTM C920, Type S, Grade NS, Class 100/50; One-part, low-modulus, moisture-curing, silicone. 'Dowsil 790' by Dow Consumer Solutions ; 'Spectrem 1' by Tremco. Verify compatibility with insulating glass unit manufacturer's secondary sealant. Colour as selected by Consultant. Primer as recommended by manufacturer.
- .8 Frame sealant: Type as recommended by the Aluminum Work manufacturer.
- .9 Joint backing: Closed cell foam polyethylene rod, outsized minimum 30-50% larger than joint width and compatible with joint sealant. Product as recommended by sealant manufacturer.
- .10 Joint Primer, Surface Conditioners and Cleaning Agents: As recommended by respective glazing and sealant compound manufacturer.
- .11 Airseal transition membrane: 'Sopraseal Stick 1100' by Soprema Inc., 'Exoair 110' by Tremco or 'Air-Shield' by W.R. Meadows. Membrane to come complete with applicable primer.
- .12 Anchors, clips, and angles: Extruded aluminum or stainless steel.
- .13 Shims and blocking for frame: Rigid plastic, wood is not permitted.
- .14 Flashings, closures and trim: 1.0 mm minimum aluminum sheet, finish to match curtain wall extrusion finish.
- .15 Screws, bolts and other fasteners: ASTM F738M; Stainless Steel Type 304.
- .16 Isolation coating: CAN/CGSB-1.108-M; Bitumastic coating, acid and alkali resistant material.
- .17 Spandrel panel insulation: CAN/ULC S702; minimum 56 kg/m³, unfaced, semi-rigid mineral wool.
 - .1 'Thermafiber FireSpan' by Owens-Corning.
 - .2 'CurtainRock' by Rockwool Inc.
 - .3 Thickness: As required to fill void.
 - .4 Insulation fasteners: Stik-Clip with retaining washer.
- .18 Spray Foam Insulation: One component, CFC-free, gun-grade, closed cell, flexible low-expansion polyurethane foam sealant, minimum density 15 kg/m³, maximum air leakage; 0.008 L/sm² at 300 Pa., and movement ranges of ±15%. 'Exoair Flex Foam' by Tremco or approved alternative.
- .19 Window hardware:
 - .1 Heavy duty window hardware to include all components as required for smooth, secure and complete operation and to be reviewed by the Consultant prior to ordering.
 - .2 Open-out vents: Pivot shoe heavy duty roto operator in conjunction with friction arms, aluminum hinges, and concealed allen key with removable handle and all required additional components.

- .3 Limiting stops: All operable window within reach of occupants to have limiting stops to OBC requirements.
- .4 Verify all site conditions regarding location and exact assembly requirements.
- .20 Door hardware: Supplied by finish hardware supplier under Section 08 70 00 for installation by door manufacturer.
- .21 Screens: Fiberglass yarn 14 X 18 mesh screen, conforming to CAN/CGSB 79.1-M, in an extruded aluminium frame finish to match window frame.
- .22 Weatherstripping: Durable, non-absorbing material resistant to deterioration by aging and weathering. Weather stripping shall provide complete air-tight seal at jambs and head of opening. Adapt weatherstripping as required to maintain required performance and provide any/all necessary accessories.

2.3 **FABRICATION**

- .1 Fabricate sections true to detail, free from defects impairing appearance, strength and durability. Fabricate extrusions with sharp, well defined corners.
- .2 Fabricate Aluminum Work in accordance with reviewed shop drawings and manufacturer's written instructions.
- .3 Fabricate, fit, and secure framing joints and corners accurately, with flush surfaces, and hairline joints. Apply frame sealant at joints for weatherproof seams.
- .4 Conceal anchors, reinforcement and attachments from view. Fabricate reinforcement in accordance with design requirements.
- .5 Do not expose manufacturer's identification labels on aluminum assemblies.
- .6 Fabricate continuous sill flashings with intermediate anchor clips, and joint reinforcing, form to profile shown. Fabricate filler and closure pieces as necessary for a complete and weather tight installation.
- .7 Certify aluminum windows as complying with the CAN/CSA-A440-M/A440.1-M design criteria and requirements using an easily removable label located on the inside face of glazing.
- .8 Position operable windows on main frame to provide direction of opening specified, free and smooth operation, without binding or sticking against main frame members.
- .9 Fabricate doors and frames complete with internal reinforcements, cut-outs, and recesses to accommodate finish hardware. Reinforce cut-outs to assure adequate strength.
- .10 Fabricate Aluminum Work closures and trim from aluminum sheet. Form to profile shown. Make weathertight.

- .11 Double weatherstrip windows and doors. Install weatherstripping in specially extruded ports and secure to prevent shrinkage or movement.
- .12 Fabricate glazing recess with drainage to exterior.

2.4 **ALUMINUM DOORS**

- .1 Fabricate doors of welded construction.
- .2 Glazing stop: Aluminum, square, snap-on type, designed for glazing system.

2.5 **INFILL (SPANDREL) PANELS**

- .1 Fabricate insulated spandrel panel inner facing of galvanized sheet to form an airseal backpan. Wrap edges with galvanized sheet, enabling installation and minor movement of perimeter seal.
- .2 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- .3 Provide integral reinforcing and stiffeners as required to reinforce panel against deflection caused by wind and suction loads.
- .4 Place continuous layer of insulation to airseal backpan with adhesive and impale clips and fasteners. Ensure there are not gaps between the insulation and airseal backpan.
- .5 Provide spacers as necessary to separate dissimilar metals.
- .6 Ventilate and pressure equalize the air space outside the exterior surface of the insulation, to the exterior.
- .7 Arrange fasteners and attachments to ensure concealment from view.
- .8 Glass panels: Consists of 6 mm thick spandrel glass to the exterior with insulated backpan to the inside. Insulation shall be in thickness as indicated on Contract Drawings, retained with stick clips. Seal all joints in shop with high grade butyl sealant, including perimeter seal at backpan. Colour to later selection by Consultant.
- .9 Metal panels: Consists of an exterior prefinished flush aluminum panel with panel stiffeners as required, to match colour of window framing, with insulation core in thickness as indicated on Contract Drawings and galvanized sheet back-pan.

2.6 **FINISH**

- .1 Extrusion finish: Clear anodized to AAMA 611 per Aluminum Association Designation System for Aluminum Finishes AA-M12C22A31
- .2 Doors: Clear anodized to AAMA 611 per Aluminum Association Designation System for Aluminum Finishes AA-M12C22A31.

- .3 Panel and sheet finish: As indicated on drawings to match adjacent extrusion finish.

3 Execution

3.1 EXAMINATION

- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of Work means acceptance of existing conditions.

3.2 INSTALLATION

- .1 Install Aluminum Work in accordance with reviewed shop drawings, manufacturer's written instructions, and CAN/CSA-A440-M/A440.1-M.
- .2 Install work of this Section securely, in correct location, level, square, plumb, at proper elevations, free of warp or twist.
- .3 Apply isolation coating at 0.8 mm dry film thickness to prevent corrosive or electrolytic action between dissimilar materials such as aluminum to concrete, masonry, galvanized steel and similar conditions.
- .4 Install flashings, closures, and trim pieces.
- .5 Fill voids between aluminum framing and adjacent construction with foam insulation.
- .6 Install sills in maximum lengths possible. For sills over 1200 mm in length, maintain 3 mm to 6 mm space at each end.
- .7 Refer to Contract Drawings for glazing type locations. Install glazing in accordance with Section 08 80 00.
- .8 Spandrel panels:
 - .1 Set back pans to framing, apply sealant to cover screw heads to maintain air tight seal between back pans and framing.
 - .2 Adhere stick clips to metal back pans at 300 mm o.c. both ways. Apply insulation adhesive over entire surface of barrier and around clips held with adhesive.
 - .3 Cut insulation slightly over-size and press insulation boards firmly to barrier impaling them on clips without bending clips. Butt insulation boards tightly. install retainers to clips.
- .9 Install aluminum door weatherstripping at door frame perimeter. Install weatherstripping throughout entire length and width of doors at jambs and heads.
- .10 Install doors and hardware to manufacturers' written instructions. Clean and adjust hardware for correct performance.
- .11 Install hardware in accordance with hardware templates.

- .12 Adjust fixed and operable hardware for correct clearances and function.
- .13 Remove damaged or unacceptable Products and assemblies from Site and replace to Consultant's acceptance.
- .14 Install glass presence markers, in two cross stripes extending from diagonal corners. Maintain markers until final clean-up.

3.3 **ERECTION TOLERANCES**

- .1 Tolerances: Non-cumulative.
 - .1 Maximum variation from plumb: 1.5 mm/3 m non-cumulative or 12 mm/30 m, whichever is less.
 - .2 Maximum misalignment of two adjoining members abutting in plane: 0.8 mm.
 - .3 Vertical and horizontal positions: +/- 3 mm.
 - .4 Racking of face: 6 mm, nil in elevation.
 - .5 Operable components: Consistent with smooth operation and weatherproof performance.
 - .6 Maximum perimeter sealant joint between Aluminum Work and adjacent construction: 13 mm.

3.4 **GLAZING PERIMETER AIRSEAL**

- .1 Install glazing perimeter airseal at entire perimeter of each insulating glass unit to achieve an airseal from insulating glass unit to curtain wall frame. Do not obstruct path of cavity drainage and air pressure equalization.
- .2 Perform sealant work in accordance with manufacturer's written requirements.

3.5 **AIRSEAL TRANSITION MEMBRANE**

- .1 Install primer and airseal transition membrane in accordance with manufacturer's instructions. Install airseal transition membrane into extrusion reglet as indicated on drawings. If there is no extrusion reglet, mechanically fasten airseal transition membrane to frame with batten bar fastened at 150 mm o.c.
- .2 Overlap airseal transition membrane 75 mm minimum and lap in direction of waterflow.
- .3 Coordinate airseal transition to adjacent parts of Work.

3.6 **JOINT BACKING AND ALUMINUM WORK SEALANT**

- .1 Prepare substrate surface and mask as recommended by sealant manufacturer.
- .2 Install joint backing and sealant at Aluminum Work and perimeter joints for weather tight installation in accordance with sealant manufacturer's instructions. Tool sealant. Remove excess sealant.

- .3 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in sealant. Seal between sill upstand and window-frame. Seal butt joints in continuous sills.

3.7 **ADJUSTING**

- .1 Adjust operable units to move smoothly, with proper tension, throughout their full range of motion and to fit tightly when closed and locked.
- .2 Lubricate hardware in accordance with manufacturer's instructions.
- .3 Ensure that weatherstripping makes weathertight contact and does not cause binding to affect closing and locking.

3.8 **CLEANING**

- .1 Maintain Aluminum Work, inside and outside, in clean condition throughout construction period.
- .2 Remove labels, protective material, and glass presence markers from prefinished surfaces.
- .3 Remove CAN/CSA-A440-M/A440.1-M certification labeling when directed by Consultant, in writing.
- .4 Wash Aluminum Work with solution of mild detergent in warm water, with particular attention to recesses and corners. Wipe surfaces clean and dry.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Design, labour, Products, equipment, tools, and services necessary for glass and glazing Work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
- .2 ASTM D2240, Test Method for Rubber Property - Durometer Hardness.
- .3 CAN/CGSB-12.1-M, Tempered or Laminated Safety Glass.
- .4 CAN/CGSB-12.8, Insulating Glass Units.
- .5 ULC CAN4 S104-M, Standard Method for Fire Tests of Door Assemblies.

1.3 **DESIGN REQUIREMENTS**

- .1 Glass Design:
 - .1 Design glass using a probability of breakage of 8 lites per 1000 at the first application of design load.
 - .2 Perform stress analysis. Design units to accommodate live, dead, lateral, wind, seismic, handling, transportation, and erection loads.
 - .3 Perform a thermal stress analysis on each glass unit with Low-E coating and provide heat strengthening and/or tempered units as necessary to prevent thermal breakage.
 - .4 Perform a thermal stress analysis on each insulating thermal unit and provide heat strengthening and/or tempered units as necessary to prevent thermal breakage.
 - .5 Where required, design glazing units so as not to allow thermal stress fracture due to heat build-up behind insulating units.
 - .6 Roller wave:
 - .1 Heat treated flat glass to be by horizontal (roller hearth) process with inherent roller wave distortion parallel to the bottom edge of the glass as installed.
 - .2 Maximum peak to valley roller wave 0.08 mm in the central area and 0.20 mm within 267 mm of the leading and trailing edge or 100 millidiopter over 95% of the glass surface.
 - .3 Maximum bow and warp 0.79 mm per 300 mm.
 - .4 Roll distortion is to run parallel to the width dimension when installed in the building.
 - .7 Coordinate with applicable Sections as required to meet intended energy and performance requirements for insulating glass units.

- .2 Limit glass deflection to flexural limit of glass with full recovery of glazing materials.
- .3 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.

1.4 **SUBMITTALS**

- .1 Shop drawings:
 - .1 Submit shop drawings in accordance with the Conditions of the Contract indicating as a minimum:
 - .1 Fabrication and erection of glazing elements indicating materials, thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - .2 Samples:
 - .1 Submit following samples in accordance with the Conditions of the Contract
 - .2 Submit one sample of each type of glass.
 - .1 300 x 300 mm of each type of insulating glass unit, complete with each different Low-E coating.
 - .2 300 x 300 mm of each colour of spandrel glass.
 - .3 Two 300 x 300 mm samples of each type of glass film.
- .3 Certificates: Submit manufacturer's certification that glass and glazing materials are compatible.
- .3 IGMA Compliance Audit: Submit in accordance with the Conditions of the Contract, a written certification of successful completion of a Compliance Audit within the last six months.
- .4 Extended warranty: Submit extended warranty signed and registered by the manufacturer providing the warranty in the name of the Owner for the timeframe and coverage specified in this Section.

1.5 **QUALITY ASSURANCE**

- .1 Insulating glass unit fabricators shall be a certified member of the Insulating Glass Manufacturer's Alliance (IGMA). IGMA members must participate in the certification program and shall have successfully passed a Compliance Audit within the last six months.
- .2 Installers qualifications: Perform Work of this Section by a company that has a minimum of five years proven experience in the installation of glazing units of a similar size and nature.

1.6 **SITE CONDITIONS**

- .1 Glaze with compounds, sealants, or tapes only when glazing surfaces are at temperatures over 4°C, and when positive that no moisture is accumulating on them from rain, mist, or condensation.

- .2 When temperature of glazing surfaces is below 4 °C, obtain from Consultant approval of glazing methods and protective measures which will be used during glazing operations.

1.7 **EXTENDED WARRANTY**

- .1 In accordance with Section 08 44 00.

2 Products

2.1 **ACCEPTABLE MANUFACTURERS**

- .1 Glass manufacturers:
 - .1 AGC Flat Glass.
 - .2 Cardinal Glass Industries.
 - .3 Guardian Industries.
 - .4 PPG Industries Ltd.
 - .5 Viracon Inc.
 - .6 Vitro Architectural Glass (formerly PPG Industries Ltd.)

2.2 **MATERIALS**

- .1 All materials under Work of this Section, including but not limited to, primers, coatings, sealers, sealants, adhesives and cleaners are to have low VOC content limits.
- .2 Tempered glass (**TG**): CAN/CGSB-12.1-M, Type 2, Class B, Category II, clear, minimum 6 mm thick.
- .3 Security Laminated glass (exterior): to CAN/CGSB-12.1, Category II, consisting of top layer of 3 mm thick clear float glass, 2.2 mm thick clear PVB interlayer, and bottom layer of 3 mm thick clear float glass. PVB interlayer to be 'Butacite PVB' film by Dupont or approved alternative.
- .4 Spandrel glass: ASTM C1048, Condition B, 6 mm thick tempered glass, with water-based silicone emulsion coating applied to backside, 'Opaci-Coat 300' by ICD High Performance Coatings or approved alternative. Colour: To be selected by consultant from standard colour range.
- .5 Insulating glass units:
 - .1 To CAN/CGSB-12.8-M, ASTM E2190 and IGMA requirements utilizing approved stainless steel edge spacer. Dual seal with a PIB primary seal and silicone secondary seal.
 - .2 To comply with IGMA labelling requirements to be considered certified. Materials, excluding the glass, shall be from the same manufacturer as those employed for the certification of the insulating glass units.

- .6 Low-E coating (Soft coat): ASTM C1376, high performance sputtered low-E coating. Provide insulating glass units with low-E coating edge deletion and low-E coating. Apply low-E coating to second surface unless otherwise indicated. 'EnergySelect 36' by AGC Flat Glass, 'Cardinal LoE-272' by Cardinal Glass Industries or 'SN 68' by Guardian Industries.
- .7 Glazing and rebate primers, sealants, sealers, and cleaners: Compatible with each other. Type as recommended by glass manufacturer.
- .8 Glazing sealant: Silicone sealant as recommended by glazing manufacturer. Verify compatibility with insulating glass unit secondary sealant.
- .9 Security sealant: ASTM C920; Type S, Grade NS, Class 50. One-component, self-priming, neutral cure silicone sealant. 'Dowsil 995' by Dow Consumer Solution or approved alternative.
- .10 Heel & toe bead: Silicone sealant as recommended by glazing manufacturer.
- .11 Glazing gasket: 'Visionstrip' by Tremco Ltd., extruded composite glazing seal, size as recommended by manufacturer.
- .12 Glazing tape: 'Polyshim II' glazing tape EPDM shim.
- .13 Glazing splines: EPDM or neoprene, extruded shape to suit glazing channel retaining slot, colour as selected.
- .14 Setting blocks (regular): EPDM, 80 - 90 Shore A durometer hardness to ASTM D2240, sized to suit glazing method, glass unit weight and area.
- .15 Edge blocks: EPDM, 60-70 Shore A Durometer hardness, sized with 3 mm clearance from glass edge and spanning glass thickness(es). Capable of withstanding weight of glass unit, self adhesive on face.
- .16 Glass presence markers: Easily removable, non-residue depositing.
- .17 Screws, bolts and fasteners: Type 304 stainless steel.

2.3 **GLAZING AND FILM SCHEDULE**

- .1 Glass types shall be as indicated on Exterior Schedule and Drawings unless otherwise required due to thermal stress analysis.
- .2 **GL-1:** (typical insulated exterior): Security laminated glass exterior lite, low-e coating on surface #2, argon filled air space, 6mm clear tempered interior lite, 25mm overall thickness.
- .3 **GL-2:** (typical at entrance doors, gym): Security laminated glass exterior lite, low-e coating on surface #2, argon filled air space, 7mm laminated safety glass interior lite, 25mm overall thickness.

- .4 **GL-3:** 8.2 mm thick spandrel glass with prefinished aluminum back-pan filled with semi-rigid insulation. Back-pan to match mullion framing.

2.4 **FABRICATION**

- .1 Verify glazing dimensions on Site.
- .2 Clearly label each glass lite with maker's name and glass type. Ensure labels are easily removable, non-residue depositing type. Do not remove labels until after Work is accepted by Consultant.
- .3 Fabricate glazing not less than 3 mm smaller than rebate size in either dimension; allow for edge spacers, shims, and setting blocks as necessary.
- .4 Work shall have smooth finished surfaces free from distortion and defects detrimental to appearance and performance.
- .5 Carefully make and fit details. Take special care with exposed finished Work to produce a neat and correct appearance to the Consultant's acceptance.
- .6 Grind and polish a 1.5 mm arris to both edges of exposed glazing at locations where glazing is not encapsulated in framing and where edges are exposed to occupants.
- .7 Fabricate argon filled thermal units with air space filled minimum 90% with argon gas.

3 Execution

3.1 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of Work means acceptance of existing conditions.
- .2 Verify that openings for glazing are correctly sized and within tolerance.
- .3 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.
- .4 Laminated glass edges shall be completely covered by tape to protect against sealants and water if required by Manufacturer.

3.2 **PREPARATION**

- .1 Clean contact surfaces with solvent and wipe dry.
- .2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- .3 Prime surfaces scheduled to receive sealant.

3.3 **INSTALLATION**

- .1 Provide glazing in accordance with IGMA recommendations. Provide continuous contact between glazing tapes and gasket to the glazing.
- .2 Install glazing to the Work of Sections 08 11 13 and 08 44 00.
- .3 Provide neat, straight sight lines. Trim excess glazing material flush with top of stops and fixed leg of frames.
- .4 Remove protective coatings, glazing stops, clean rebate and glass contact surfaces with solvent, wipe dry.
- .5 Apply primer/sealer to contact surfaces, prior to glazing.
- .6 Apply glazing tape as per manufacturer's instructions including recommended corner sealant.
- .7 Use setting blocks at 1/4 points and spacers to centre glass unit in frame.
- .8 Install glazing in accordance with reviewed shop drawings and manufacturer's written instructions. Install glazing with full contact and adhesion at perimeter. Maintain edge clearance recommended by glass manufacturer.
- .9 Apply a continuous heel bead of sealant around perimeter of inboard lite of the sealed unit and the metal framing.
- .10 Re-install glazing stops ensuring continuous contact and rattle-free installation. Do not distort glass. Trim tape protruding more than 2 mm above stop.
- .11 Install glazing gasket in accordance with manufacturer's recommendations.
- .12 Do not cut or abrade tempered, heat treated, or coated glass.
- .13 Install glass presence markers in two cross stripes extending from diagonal corners. Maintain markers until final clean-up.
- .14 Remove, dispose of, and replace broken, cut, abraded glass, and defective glass including but not limited to production dimples, roller wave or marks, tong marks, chips, cracks, etc.
- .15 Exterior glass: Glaze units with gasket on exterior side and glazing tape on interior side. Seal gap between glazing and stop with sealant to depth equal to bite of frame. Apply cap head of sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.
- .16 Interior glass: Glaze interior glass using glazing gasket glazing tape.

3.4 **CLEANING**

- .1 Immediately remove sealant and compound droppings from finished surfaces.
- .2 Remove labels, protective material, and glass presence markers from prefinished surfaces.
- .3 Clean glass surfaces with cleaning agents and methods in accordance with Manufacturer's written instructions.

END OF SECTION