

The Corporation of the Town of Milton

Purchasing and Risk Services

Contract Documents and Specifications

Contract No. 19-524A



Interior and Exterior Renovations at the Milton Innovation Centre

The Corporation of the Town of Milton shall **ONLY** accept **ELECTRONIC TENDER SUBMISSIONS** submitted through the Town of Milton's Bidding System website. Tenders submitted and/or received by any other method shall be rejected, unless the Town of Milton has instructed otherwise by published Addendum.

ELECTRONIC TENDER SUBMISSIONS ONLY, shall be received by the Bidding System, no later than **11:00:00 a.m., local time, on the closing date.**

Bid Inquiries: All questions/inquiries to be submitted in writing to Purchasing through the Town of Milton's website - Bids and Tenders using the "Submit a Question" link associated with this bid request. Questions concerning this bid must be received prior to the Question deadline to receive consideration.

Site Meeting:

Date: May 16, 2019 at 10:00 am

Location: Milton Innovation Centre, 555 Industrial Drive, Milton, ON L9T 5E1. Meet in the main lobby.

Tenders will be received for:

Interior & Exterior Renovations at the Milton Innovation Centre

Contract No. 19-524A
The Corporation of the Town of Milton

May 2019

Consultant:

+VG ARCHITECTS
The Ventin Group Limited
50 Dalhousie Street
Brantford, Ontario N3T 2H8

TENDER DIRECTORY

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Form of Tender - to be completed in Town of Milton Bidding System.

PREQUALIFIED LIST OF SUPPLIERS:

Tenders will only be received from the following list of Pre-Qualified Suppliers:

- Anacond Contracting Inc.
- BDA Inc.
- Defaveri Group Contracting Inc
- Gen-eer Construction Ltd
- GEN-PRO/1320376 Ontario Ltd.
- Ira McDonald Construction Limited
- Niacon Ltd.
- Roof Tile Management Inc
- Spectre Construction & Management Inc
- Stracor Inc.

Section No. 1

**INFORMATION
FOR
BIDDERS**

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1.0 Personal Knowledge

The Bidders shall have personal knowledge of the locations of the proposed Works and shall inform themselves as to the actual conditions and requirements thereof, and shall not claim at any time after the submission of the tender that there was any misunderstanding in regard to the conditions imposed by the Contract. A subsurface investigation was conducted by the Corporation of the Town of Milton (hereafter referred to as the “Town” or “Owner”) to determine the soil types likely to be encountered within the excavation and is provided only as a guide for the Bidder's information.

1.1 Omissions, Discrepancies and Interpretations

Should a Bidder find omissions from or discrepancies in any of the tender documents or should they be in doubt as to the meaning of any part of such documents, they should notify the Town in writing. For the purposes of these tender documents, the term “Project Consultant” shall mean “the Engineer or Landscape Architect or other consultant designated by the Town as its representative for the purposes of the Work”. If the Town considers that a correction, explanation or interpretation is necessary or desirable, an addendum to all who have taken out tender documents will be issued. No oral explanation or interpretation shall modify any of the requirements or provisions of the tender documents.

1.2 Bidder's Ability and Experience

It is not the intention of the Town to award a Contract to any Bidder who does not furnish satisfactory evidence that he/she/it has the ability and experience to perform the various types of work involved, and that he/she/it has sufficient capital and plant to enable the Bidder to execute the same successfully and to complete them in the time named in the Contract.

1.3 Informal or Unbalanced Tenders

Tenders that contain prices which appear to be so unbalanced as likely to affect adversely the interest of the Town may be rejected.

1.4 Freedom of Information

The information collected in response to this document is collected under the authority of the Municipal Act RSO 1990, Chapter M45. The information collected will be used solely for the purpose stated herein.

1.5 Withdrawal or Qualifying of Tenders

A Bidder may withdraw their bid prior to the Submission Deadline through the Bidding System. The Town will not accept amendments to submitted bids. If a Bidder wishes to amend an already submitted bid prior to the Submission Deadline, the Bidder may

withdraw the existing bid and submit a revised bid prior to the Submission Deadline through the Bidding System. The Bidder is solely responsible to ensure the re-submitted bid is RECEIVED by the Bidding System by no later than the Submission Deadline/Closing Date.

1.6 Tender Submission

- .1 Each electronic tender submission shall include the following to be completed in the Bidding System:
 - a. Form of Tender - Quantity and Price Schedule(s) and Tender Summary
 - b. Digital Bid Bond (e-Bond)
 - c. Digital Agreement to Bond (e-Bond)
 - d. Statements A through C inclusive
 - e. Form of Tender declaration
 - f. Acknowledgement of all Addenda
- .2 The Corporation of the Town of Milton shall ONLY accept ELECTRONIC TENDER SUBMISSIONS submitted through the Town of Milton's Bidding System Website no later than the Submission Deadline/Closing Date. Tender submissions submitted and/or received by any other method shall be rejected.
- .3 HARD COPY BID SUBMISSIONS WILL NOT BE ACCEPTED
- .4 Bidders are cautioned that the timing of their Tender Submission is based on when the Bid is RECEIVED by the Bidding System, not when a Bid is submitted by a Bidder, as Bid transmission can be delayed in an "Internet Traffic Jam" due to file transfer size, transmission speed, etc.
- .5 For the above reasons, the Town of Milton recommends that Bidders allow sufficient time to complete their Tender Submission and to resolve any issues that may arise. The closing time and date shall be determined by the Town of Milton's Bidding System web clock.
- .6 Late Bids shall not be accepted by the Bidding System.

1.7 Completion of Statements

In order to aid the Town in determining the ability of each Bidder, the Bidder shall complete the following statement tables in the Bidding System:

Statement "A" Stating the Bidder's experience in similar work which he/she/it has successfully completed.

Statement "B" Giving a list of the Bidder's senior supervisory staff with a summary of the experience of each.

Statement "C" The Bidder shall give the name and address of each proposed

Sub-Contractor used in making up his/her/its tender and shall state the portion of the Work allotted to each. Only one Sub-Contractor shall be named for each part of the Work to be subcontracted.

1.8 Tender Prices

The lump sum prices or unit prices quoted in the Form of Tender - Quantity and Price Schedule shall, unless otherwise stated or specified, include the furnishing of all materials, supplies and equipment and providing of all expertise, labour, construction tools and equipment, utility and transportation services necessary to perform and complete all the work required under the Contract, including all miscellaneous work, whether specifically included in the Contract Documents or not. It is the intention of the Drawings and Specifications to provide finished work. Any items omitted therefrom which are clearly necessary for the completion of the work or its appurtenances shall be considered a portion of the work though not directly specified and/or shown or called for on the Drawings.

In the event of an increase or decrease in the quantity of any particular item of work, the actual quantity executed will be paid for at the rate stated in the Form of Tender for that item, subject to the General Conditions for additions and deductions.

For tenders containing unit prices and/or lump sums as the basis of payment, the Bidder must submit details of how each lump sum item in the tender is made up before the execution of a contract, if required to do so by the Project Consultant.

Harmonized Sales Tax (HST) will apply to this Contract. The HST will be calculated and shall be shown as a separate total on the Quantity and Price Schedule Tender Summary Table. The Bidder will also be required to supply to the Town his/her/its HST Registration Number upon request.

Where a change in Canadian tax legislation occurs after the tender closing date for this Contract, and this change could not have been anticipated at the time of bidding, the Town will increase or decrease contract payments to account for the exact amount of tax change involved.

Claims for compensation for additional tax cost shall be submitted by the Contractor to the Project Consultant. Such claims for additional tax costs shall be submitted not later than 30 days after the date of acceptance of the Work.

Where the Contractor benefits from a change in Canadian taxes, the Contractor shall submit to the Project Consultant a statement of such benefits. This statement shall be submitted not later than 30 days after the date of acceptance of the Work.

The Project Consultant reserves the right to make deductions from regular progress payments to compensate for the estimated benefit from decreased tax costs. Such deductions will be set-off from contract payments pending receipt of the statement itemizing the benefits which have resulted from a decrease in tax costs, at which time the final payment adjustment will be determined.

1.9 Bonding Requirements

.1 Digital Bid Bond and Agreement to Bond Only:

Each submission must be accompanied by a digital Bid bond and a digital Agreement to Bond. The Town will only accept submissions that include both the Bid Bond and Agreement to Bond in an electronically verifiable/enforceable (e-Bond) format. For more information regarding e-bonds bidders are encouraged to contact their surety company or visit the Surety Association of Canada at the following link:

<https://www.surety-canada.com/en/ebonding/index.html>

Note: A scanned pdf copy of bonds are not acceptable.

Bidders shall upload their Bid Bond and Agreement to Bond to the Town of Milton's Bidding System accordingly in the bid submission files labelled "Bid Bond" and "Agreement to Bond".

All instruction details for accessing authentication should be included with the up-loaded Bond.

Should the Surety Company or Broker provide both digital bonds together in one zipped file, the bidder should upload the same zipped file containing both bonds to the Owner's Bidding System "Bid Bond" submission file and the "Agreement to Bond" submission file. The one zipped file from the Surety company should not be taken apart or unzipped otherwise the bonds will not validate.

.2 Bonds shall be issued by a bonding company licensed to issue such instruments in the Province of Ontario.

.3 Bid Bond:

.1 Each *Bidder* shall submit with its bid a bid bond in an amount equal to **not less than 5%** of the total bid price, and naming the Town of Milton as the Obligee.

.2 The bid bond shall be valid for the *Bid Acceptance Period*.

.3 If the *Bidder* so notified refuses or neglects to comply with the said conditions, the *Town* may, at its sole discretion, claim against the bid bond, and the bid bond shall be subject to forfeiture, not as penalty, but as liquidated damages sustained. The *Town* shall then have the right to award the *Contract* to the *Bidder* submitting, in the *Town's* sole and absolute discretion, the next most appropriate bid, or to re-offer the invitation to submit bids.

.4 No interest will be paid for the bid bond held or retained by the *Town*.

- .4 Agreement to Bond:
- .1 Each *Bidder* shall submit with its bid an Agreement to Bond issued by a bonding company licensed to issue such instruments in the Province of Ontario, obliging bonding company to issue a performance bond and a labour and material payment bond, each substantially in the forms required under the *Construction Act*, RSO 1990, c C30 (the “**Construction Act**”), naming the Town of Milton as the Obligee, in the amounts as follows:
- .1 Performance Bond
Amount: **100%** of the bid price, inclusive of applicable taxes
- .2 Labour and Material Payment Bond
Amount: **50%** of the bid price, inclusive of applicable taxes
- .3 Maintenance security: (i). five percent (5%) of the bid price for contracts valued at one million dollars (\$1,000,000) or less OR (ii). two and one half percent (2.5%) of the bid price for contracts valued at greater than one million dollars (\$1,000,000). If Bidder elects to provide the maintenance security within the terms of the performance bond, notwithstanding section 1.9.4.1, the Performance Bond will be the form prescribed under the Construction Act, as amended to the satisfaction of Owner to meet the maintenance security requirements hereunder
- .2 The Agreement to Bond shall be valid for the *Bid Acceptance Period*.
- .5 Costs for bonds shall be included in the stipulated price bid.

1.10 Addenda

Addendum, if required, shall form part of the bid documents. Bidders shall acknowledge receipt of any addenda when submitting their bid through the Bidding System. Bidders shall check a box for each addendum/addenda and any applicable attachments that issued before a bidder can submit their bid submission online.

If a bidder completes their electronic tender submission prior to an addendum being issued, the Bidding System shall WITHDRAW their bid submission and change their bid submission to an INCOMPLETE STATUS (not accepted by the Owner). The withdrawn bid submission can be viewed by the bidder in the “MY BIDS” section of the Bidding System. The bidder is solely responsible to:

- .1 review the status of their bid;
.2 make any required adjustments to their bid;
.3 acknowledge the addendum; and

- .4 ensure the re-submitted bid is RECEIVED by the Bidding System by no later than the Submission Deadline.

1.11 Opening of Bids

The names of the Bidders who submitted a bid and bid pricing will be made available on the Town of Milton's Bids and Tenders website in public after the closing date on the day of bid closing.

1.12 Workplace Safety and Insurance Board Coverage

Workplace Safety and Insurance coverage is applicable and required where Contractors engage in any form of work on Town premises. Contractors without Workplace Safety and Insurance coverage shall be required to submit a "Certificate of Clearance" to enable the Town to obtain a Workplace Safety and Insurance Board ruling to determine an "Independent Operator" status.

The Contractor clearly understands and agrees that he/she/it is not, nor is anyone hired or subcontracted by him/her/it, covered by the Town under the Workers' Compensation Act, and he/she/it shall be responsible for and shall pay all dues and assessments payable under the Workers' Compensation Act, the Unemployment Act, or any other Act, whether Provincial or Federal, in respect of his/her/itself, his/her/its employees and operations, and shall, upon request furnish the Town with such satisfactory evidence that he/she/it has complied with the provisions of any such acts. If the Contractor fails to do so, the Town shall have the right to withhold payment of such sum or sums of money due to the Contractor that would be sufficient to cover his/her/its default and the Town shall have the right to pay same.

Information on coverage under the Workers' Compensation Act can be obtained directly from the Workplace Safety and Insurance Board.

The Town is not and shall not be deemed to be the employer of the Contractor any subcontractor or their respective personnel under any circumstances whatsoever.

1.13 Assignment Subletting (Subcontractors)

The Bidder shall provide in Statement 'C' in the Bidding system the name and address of each proposed Subcontractor used in making up their tender and shall state the portion of the work allotted to each. Only one Subcontractor shall be named for each part of the Work to be subcontracted. The total value of the work sublet, shall not exceed 50% of the total tender. Indicate subcontracting values in 'Statement C'.

After the tender has been accepted by the Town, the Contractor shall not be allowed to substitute other contractors in place of those named in their tender without written approval from the Project Consultant.

1.14 Indemnification

The Contractor shall indemnify and save the Town harmless from any and all claims which may arise from the Contractor's operations under this Contract as provided for in the General Conditions.

1.15 Insurance

The Contractor shall provide and maintain at its own expense; policies of insurance acceptable to the Town, issued by an insurance company incorporated or licensed to conduct insurance business in the Province of Ontario which shall be in accordance with the insurance requirements provided for in the General Conditions 6.03. The insurance policy shall specify and include the Town and Project Consultant as an additional insured and loss payee. A copy of all insurance policies shall be provided to the Town.

1.16 Tender is Open to Acceptance and Irrevocable

Providing also that this tender is to continue open to acceptance and irrevocable until the formal Contract shall be executed by the successful Bidder for the Work, and the bond, or bonds, hereinafter mentioned shall be executed by the approved surety or sureties, and that the Town may, at any time within **90 days** of closing date, accept this tender without notice, whether any other tender has previously been accepted or not.

1.17 Performance Bond & Labour and Material Bond

Within 7 Working Days (as hereafter defined) after receipt of notification of the acceptance of his/her/its tender, the successful Bidder shall furnish, at his/her/its own expense, a performance bond in an amount equal to one hundred percent (**100 %**) of the tender sum, a labour and material payment bond in an amount equal to fifty percent (**50 %**) of the tender sum, and maintenance security as required under the General Conditions Supplemental for the faithful performance of the Contract. These bonds shall secure the proper fulfillment of the Contract, shall be taken with a satisfactory guaranty surety company authorized to carry on business in the Province of Ontario, and shall be substantially in the forms required by the Construction Act. Bidder may elect to provide the required maintenance security for the Warranty Period as a standalone bond or within the terms of the performance bond. If Bidder elects to provide the maintenance security within the terms of the performance bond, the performance bond will be the form prescribed under the Construction Act, as amended to the satisfaction of Owner to meet the Maintenance Security requirements hereunder.

1.18 Execution of Agreement and Bonds

If this tender is accepted, the successful Bidder shall forthwith furnish as approved surety for the proper fulfillment of the Contract Documents and shall execute the Agreement and Bonds, in triplicate, substantially in the forms required by the Construction Act where applicable, within **7 Working Days** after being notified so to do

by the Town.

1.19 Bidder's Offer

By submission of the Tender, the Bidder acknowledges and confirms that he/she/it supply and do all or any part of that which is set out or called for in this tender, on the terms and conditions and under the provisions set out or called for in these Contract Documents at the unit and lump sum prices hereunder stated.

1.20 Formal Contract Required

This tender is subject to a formal contract in the form required by the Town incorporating the terms of these Contract Documents being prepared and executed.

1.21 Commencement & Completion of Work

The Work shall be started **within 7 Working Days of the written orders** to commence same and carried on to completion and full possession thereof given to the Town within the time period as indicated in the Contract documents. Unless an extension of time has been granted by the Project Consultant in writing, in which case it shall be carried out to completion and possession given to the Town within the additional time as allowed.

1.22 General

The General Conditions included in the Contract Documents which General Conditions shall apply to the Work and the Contract and shall be binding upon the Contractor except and only to the extent that the same are expressly amended, deleted or replaced in these provisions or the Special Conditions.

All terms used herein and not otherwise defined shall have the meanings given to such terms in the General Conditions included in the Contract Documents.

These provisions shall be deemed to be included within and treated as Supplemental General Conditions forming part of the Contract Documents.

The Owner and the Contractor acknowledge and agree that: (i) this procurement process (within the meaning set out in Section 87.3 of the Construction Act) that was commenced, and the Contract will be entered into, on or after July 1, 2018, but before October 1, 2019, and (ii) amendments to the Construction Act that are to be proclaimed and come into force on July 1, 2018 are applicable to the Contract, but amendments to the Construction Act that are to be proclaimed and come into force on October 1, 2019 are not applicable to the Contract; and (iii) the Contractor will incorporate into its contracts with subcontractors and suppliers, and ensure that all subcontractors and suppliers are made aware of, these acknowledgements and agreements.

The Contract shall be construed and interpreted in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.

1.23 Compliance with the Accessibility for Ontarians with Disabilities Act, 2005

When acquiring goods and services on behalf of the municipality, staff shall consider, and have regard for, accessibility issues as they pertain to the acquisition of such goods and services, and shall comply with the requirements set out in provincial regulations under the Accessibility for Ontarians with Disabilities Act, 2005, including the Accessibility Standards for Customer Service and the Integrated Accessibility Standards.

Accessible Customer Service

Vendors, including consultants and contractors, shall comply with the requirements set out under the Accessibility Standards for Customer Service (O.R. 429/07 under the Accessibility for Ontarians with Disabilities Act, 2005).

Contractors, consultants, and vendors shall ensure their employees, who are providing goods and services on behalf of the Town, complete the “Confirmation of Acceptance” form, which can be found on the Town’s website, which acknowledges that they have read and understood the Guidelines for Delivering Accessible Customer Service and the Integrated Accessibility Standards training brochure.

Accessible Digital Documents

Documents, provided by contracted vendors, which will be posted to the Town’s website, shall be developed and/or designed using techniques and software that enables the author to create an accessible source document.

Microsoft Word, Excel, PowerPoint, or Adobe In-Design is the preferred software for creating accessible documents. Accessible Microsoft Office or In-Design documents shall:

- Include alternate text tags on all pictures, images, logos, and signatures
- Use contrasting color schemes (white text on a black background or vice versa)
- Avoid using clashing color schemes such as red text on a green background or red text on a black background
- Avoid using all caps and italics.
- Use a combination of upper and lower case lettering for titles and subtitles
- Comply with the corporate font style and size (Arial 12 pt.)
- Use the style features, in Microsoft Office applications, when inserting bullets, numbers, footers, and headers
- Spell out all acronyms
- Include a description of any link embedded within the text of the document.
- Avoid connecting a hyperlink to a specific word such as “here”. A screen reader won’t identify it as a link.
- Include accessible charts and tables
- Use proper heading structures

- Ensure the final document is saved properly. This will prevent the accessibility features to be lost in the conversion from source document to PDF.

Note: Information on how to create accessible documents in Microsoft Office 2007 and 2010 applications can be found at <http://adod.idrc.ocad.ca/>.

Contractors and consultants shall check for accessibility before submitting any document to the Town. Microsoft Word 2010 provides an internal accessibility checker.

Accessible Websites and Web Content

In accordance with section 14 of the Integrated Accessibility Standards (O.R. 191/11 under the AODA), new websites, or WebPages, created on behalf of the Town, shall conform to level A of the Web Content Accessibility Guidelines (WCAG) 2.0.

<http://www.w3.org/WAI/intro/wcag.php> (WCAG 2.0 Overview) will provide vendors with an understanding of the Web Content Accessibility Guidelines.

Any document, provided by a contractor or consultant that is posted to the Town's website shall contain the elements outlined in section 15.3 of these terms and conditions.

Self-Service Kiosks

When acquiring self-service kiosks, whereby information is provided or a point-of-sale occurs, the Town shall ensure the provision of this service offers accessibility features and options. Accessibility features may include, but are not limited to:

- Braille and tactile numbers and key commands
- An earphone plug-in for audio commands
- A large print interface or display
- Contrasting colored buttons
- Adequate space, under the kiosk, to easily maneuver a wheelchair, scooter, or other mobility device

Accessible Facilities

Contractors, consultants, and/or vendors providing goods and services, related to the construction of a new facility or upgrades to an existing facility, shall incorporate the requirements set out in the Design of Public Spaces Standards and the City of London's Facility Accessibility Design Standards into their site plan drawings and construction practices.

If it is not practical to incorporate a particular requirement into the site plan drawings or construction practices, documentation outlining the rationale for not meeting it shall be included in the project's log and any final reports to the Town.

1.24 Tender Irregularities - Construction

Late Bids (by any amount of time)	Automatic Rejection. Electronic Bidding system shall not accept late Bid submissions.
The Corporation of the Town of Milton shall only accept Electronic Tender submissions submitted through the Town of Milton's Bidding System website.	Bids submitted and/or received by any other method - Automatic Rejection Bids submitted in Hard Copy - Automatic Rejection
Bid Form not signed	Automatic Rejection. The Electronic Bidding system shall not accept bids unless the Bidder has checked a box confirming authority to submit a bid on behalf of the Bidder.
All Addendum(s) not acknowledged (if issued).	Automatic Rejection, i. A Bidder's submission shall not be accepted by the Electronic Bidding system without acknowledgement of Addendum(s). ii. Addendum(s) that are issued, after a Bidder has submitted their Bid, are automatically withdrawn by the Electronic Bidding system and the Bidder is required to acknowledge the new addendum(s) and re-submit their submission prior to the closing date and time.
Execution of Agreement to Bond: <ul style="list-style-type: none"> • bond provided is not a digital bond • surety company not operating in the province of Ontario 	Automatic Rejection Automatic Rejection
Execution of Bid Bonds: <ul style="list-style-type: none"> • bond provided is not a digital bond • surety company not operating in the province of Ontario 	Automatic Rejection Automatic Rejection
Validation of Digital Bond(s) <ul style="list-style-type: none"> • Unable to validate digital bond(s) 	1 working day for the Town to validate with Surety Company Should the Bond(s) not validate - Automatic Rejection
Other Bid Security: <ul style="list-style-type: none"> • scanned copy of bond • any other form of bid security 	Automatic Rejection Automatic Rejection
Bid Pricing submitted in bidding system Pricing Table and also submitted in an uploaded file.	Bid Pricing submitted in the bidding system Pricing Table will prevail.
Alternate Items Bid in Whole or In Part	Available for further consideration unless specified otherwise in request
Other Mathematical Errors Which are Not Consistent with the Unit Prices	2 working days to initial corrections as made by the Purchasing, Corporate Services
Pages Are Missing	2 working days to supply unless specified otherwise in the request. Town reserves the right to waive the extra pages and accept bid or to reject bid outright
Bid Documents Which Suggest That the Bidder Has Made a Major Mistake in Calculations or bid	Reviewed on a case-by-case basis. may result in Automatic Rejection.

Section 2

GENERAL CONDITIONS

OPSS MUNI GENERAL CONDITIONS OF CONTRACT

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SECTION GC 1.0 - INTERPRETATION

GC 1.01 Captions

.01 The captions appearing in these General Conditions have been inserted as a matter of convenience and for ease of reference only and in no way define, limit, or enlarge the scope or meaning of the General Conditions or any provision hereof.

GC 1.02 Abbreviations

.01 The abbreviations on the left below are commonly found in the Contract Documents and represent the organizations and phrases listed on the right:

"AASHTO"	-	American Association of State Highway Transportation Officials
"ACI"	-	American Concrete Institute
"ANSI"	-	American National Standards Institute
"ASTM"	-	ASTM International
"AWG"	-	American Wire Gauge
"AWWA"	-	American Water Works Association
"CCIL"	-	Canadian Council of Independent Laboratories
"CGSB"	-	Canadian General Standards Board
"CSA"	-	CSA Group - formerly Canadian Standards Association
"CWB"	-	Canadian Welding Bureau
"GC"	-	General Conditions
"ISO"	-	International Organization for Standardization
"MOECP"	-	Ontario Ministry of the Environment and Conservation and Parks
"MTO"	-	Ontario Ministry of Transportation
"MUTCD"	-	Manual of Uniform Traffic Control Devices, published by MTO
"OHSAA"	-	Ontario Occupational Health and Safety Act
"OLS"	-	Ontario Land Surveyor
"OPS"	-	Ontario Provincial Standard
"OPSD"	-	Ontario Provincial Standard Drawing
"OPSS"	-	Ontario Provincial Standard Specification
"OTM"	-	Ontario Traffic Manual
"PEO"	-	Professional Engineers Ontario
"SAE"	-	SAE International
"SCC"	-	Standards Council of Canada
"SSPC"	-	The Society for Protective Coatings
"UL"	-	Underwriters Laboratories
"ULC"	-	Underwriters Laboratories Canada
"WHMIS"	-	Workplace Hazardous Materials Information System
"WSIB"	-	Workplace Safety & Insurance Board

GC 1.03 Gender and Singular References

.01 References to the masculine or singular throughout the Contract Documents shall be considered to include the feminine and the plural and vice versa, as the context requires.

GC 1.04

Definitions

.01 For the purposes of the Contract Documents the following definitions shall apply:

Abnormal Weather means an extreme climatic condition characterized by wind speed, air temperature, precipitation, or snow fall depth, that is less than or greater than 1-1/2 standard deviations from the mean determined from the weather records of the 25 year period immediately preceding the tender opening date.

Actual Measurement means the field measurement of that quantity within the approved limits of the Work.

Addenda means any additions or change in the Tender documents issued by the Owner prior to Tender closing.

Additional Work means work not provided for in the Contract Documents and not considered by the Contract Administrator to be essential to the satisfactory completion of the Contract within its intended scope.

Agreement means the agreement between the Owner and the Contractor for the performance of the Work that is included in the Contract Documents.

Base means a layer of Material of specified type and thickness placed immediately below the pavement, driving surface, finished grade, curb and gutter, or sidewalk.

Business Day means any Day except Saturdays, Sundays, and statutory holidays.

Certificate of Subcontract Completion means the certificate issued by the Contract Administrator in accordance with clause GC 8.02.04.02, Certification of Subcontract Completion.

Certificate of Substantial Performance means the certificate issued by the Contract Administrator at Substantial Performance.

Change Directive means any written instruction signed by the Owner, or by the Contract Administrator where so authorized, directing that a Change in the Work or Extra Work be performed.

Change in the Work means the deletion, extension, increase, decrease, or alteration of lines; grades; dimensions; quantities; methods; drawings; substantial changes in geotechnical, subsurface, surface, or other conditions; changes in the character of the Work to be done; or Materials of the Work or part thereof, within the intended scope of the Contract.

Change Order means a written amendment to the Contract signed by the Contractor and the Owner, or the Contract Administrator where so authorized, covering contingencies, a Change in the Work, Extra Work, Additional Work; and establishing the basis for payment and the time allowed for the adjustment of the Contract Time.

Completion means contract completion as set out in the Construction Act.

Completion Certificate means the certificate issued by the Contract Administrator at Completion.

Completion Payment Certificate means the certificate described more particularly in clause GC 8.02.04.07.

Constructor means, for the purposes of, and within the meaning of the Occupational Health and Safety Act, R.S.O. 1990, c.O.1, as amended and amendments thereto, the Contractor who executes the Contract.

Contract means the undertaking by the Owner and the Contractor to perform their respective duties, responsibilities, and obligations as prescribed in the Contract Documents.

Contract Administrator means the person, partnership, or corporation designated by the Owner to be the Owner's representative for the purposes of the Contract.

Contract Documents mean the executed Agreement between the Owner and the Contractor, Tender, General Conditions of Contract, Supplemental General Conditions of Contract, Standard Specifications, Special Provisions, Contract Drawings, Addenda incorporated in a Contract Document before the execution of the Agreement, such other documents as may be listed in the Agreement, and subsequent amendments to the Contract Documents made pursuant to the provisions of the Agreement.

Contract Drawings or **Contract Plans** mean drawings or plans, any Geotechnical Report, any Subsurface Report, and any other reports and information provided by the Owner for the Work, and without limiting the generality thereof, may include soil profiles, foundation investigation reports, reinforcing steel schedules, aggregate sources lists, Quantity Sheets, and cross-sections.

Contract Time means the time stipulated in the Contract Documents for Substantial Performance or Completion of the Work, including any extension of time made pursuant to the Contract Documents.

Contractor means the person, partnership, or corporation undertaking the Work as identified in the Agreement.

Control Monument means any horizontal or vertical (benchmark) monument that is used to lay out the Work.

Controlling Operation means any component of the Work that, if delayed, may delay the completion of the Work.

Cut-Off Date means the date up to which payment shall be made for Work performed.

Daily Work Records mean daily Records detailing the number and categories of workers and hours worked or on standby, types and quantities of Equipment and number of hours in use or on standby, and description and quantities of Material utilized.

Day means a calendar day.

Drawings or **Plans** mean any Contract Drawings or Contract Plans, or any Working Drawings or Working Plans, or any reproductions of drawings or plans pertaining to the Work.

End Result Specification means specifications that require the Contractor to be responsible for supplying a product or part of the Work. The Owner accepts or rejects the final product or applies a price adjustment that is commensurate with the degree of compliance with the specification.

Engineer means a professional engineer licenced by the Professional Engineers of Ontario to practice in the Province of Ontario.

Equipment means all machinery and equipment used for preparing, fabricating, conveying or erecting the Work and normally referred to as construction machinery and equipment.

Estimate means a calculation of the quantity or cost of the Work or part of it depending on the context.

Extra Work means work not provided for in the Contract as awarded but considered by the Contract Administrator to be essential to the satisfactory completion of the Contract within its intended scope, including unanticipated Work required to comply with legislation and regulations that affect the Work.

Final Acceptance means the date on which the Contract Administrator determines that the Work has passed all inspection and testing requirements and the Contract Administrator is satisfied that the Contractor has rectified all imperfect Work and has discharged all of the Contractor's obligations under the Contract Documents.

Final Acceptance Certificate means the certificate issued by the Contract Administrator at Final Acceptance of the Work.

Final Detailed Statement means a complete evaluation prepared by the Contract Administrator showing the quantities, unit prices, and final dollar amounts of all items of Work completed under the Contract, including variations in tender items and Extra Work, all as set out in the same general form as the monthly Estimates.

Geotechnical Report means a report or other information identifying soil, rock, and ground water conditions in the area of any proposed Work.

Grade means the required elevation of that part of the Work.

Hand Tools means tools that are commonly called tools or implements of the trade and include small power tools.

Highway means a common and public highway any part of which is intended for or used by the general public for the passage of vehicles and includes the area between the lateral property lines thereof.

Inclement Weather means weather conditions or conditions resulting directly from weather conditions that prevent the Contractor from proceeding with a Controlling Operation.

Lot means a specific quantity of Material or a specific amount of construction normally from a single source and produced by the same process.

Lump Sum Item means a tender item indicating a portion of the Work for which payment will be made at a single tendered price. Payment is not based on a measured quantity, although a quantity may be given in the Contract Documents.

Major Item means any tender item that has a value, calculated on the basis of its actual or estimated tender quantity, whichever is the larger, multiplied by its tender unit price, which is equal to or greater than the lesser of,

- a) \$100,000, or
- b) 5% of the total tender value calculated on the basis of the total of all the estimated tender quantities and the tender unit prices.

Material means Material, machinery, equipment and fixtures forming part of the Work.

Monument means either a Property Monument or a Control Monument.

Owner means the party to the Contract for whom the Work is being performed, as identified in the Agreement, and includes, with the same meaning and import, "Authority."

Pavement means a wearing course or courses placed on the Roadway and consisting of asphaltic concrete, hydraulic cement concrete, Portland cement concrete, or plant or road mixed mulch.

Performance Bond means the type of security furnished to the Owner to guarantee completion of the Work in accordance with the Contract and to the extent provided in the bond.

Plan Quantity means that quantity as computed from within the boundary lines of the Work as shown in the Contract Documents.

Project means the construction of the Work as contemplated by this Contract.

Property Monument means any property bar, concrete pillar, rock post, cut cross or other object that marks the boundary between real property ownership.

Quality Assurance (QA) means a system or series of activities carried out by the Owner to ensure that Work meets the specified requirements.

Quality Control (QC) means a system or series of activities carried out by the Contractor, Subcontractor, supplier, and manufacturer to ensure that Work meets the specified requirements.

Quantity Sheet means a list of the quantities of Work to be done.

Quarried Rock means Material removed from an open excavation made in a solid mass of rock that, prior to removal, was integral with the parent mass.

Quarry means a place where aggregate has been or is being removed from an open excavation made in a solid mass of igneous, sedimentary, or metamorphic rock or any combination of these that, prior to removal, was integral with the parent areas.

Rate of Interest means the rate of interest as determined under the Financial Administration Act, R.S.O. 1990, c. F.12, as amended by the Minister of Finance of Ontario and issued by, and available from, the Owner.

Records mean any books, payrolls, accounts, or other information that relate to the Work or any Change in the Work, Extra Work, Additional Work or claims arising therefrom.

Roadway means that part of the Highway designed or intended for use by vehicular traffic and includes the Shoulders.

Shoulder means that portion of the Roadway between the edge of the travelled portion of the wearing surface and the top inside edge of the ditch or fill slope.

Special Provisions mean directions containing requirements specific to the Work.

Standard Drawing or Standard Specification means a standard practice required and stipulated by the Owner for performance of the Work.

Statutory Holdback means the holdbacks required under the Construction Act.

Subbase means a layer of Material of specified type and thickness between the Subgrade and the Base.

Subcontractor means a person, partnership or corporation undertaking the execution of a part of the Work by virtue of an agreement with the Contractor.

Subgrade means the earth or rock surface, whether in cut or fill, as prepared to support the pavement structure, consisting of Base, Subbase, and Pavement.

Substantial Performance has the meaning as set out in the Construction Act, R.S.O. 1990, c. C.30, as amended.

Subsurface Report means a report or other information identifying the location of Utilities, concealed and adjacent structures, and physical obstructions that fall within the influence of the Work.

Superintendent means the Contractor's authorized representative in charge of the Work and who shall be a "competent person" within the meaning of the definition contained in the Occupational Health and Safety Act, R.S.O. 1990, c. 0.1, as amended.

Surety means the person, partnership or corporation, other than the Contractor, licensed in Ontario to transact business under the Insurance Act, R.S.O. 1990, c.1.8, as amended, executing a bond provided by the Contractor.

Tender means an offer in writing from the Contractor, submitted in the format prescribed by the Owner, to complete the Work.

Time and Material means costs calculated according to clause GC 8.02.05, Payment on a Time and Material Basis.

Utility means an aboveground or underground facility maintained by a municipality, public utility authority or regulated authority and includes services such as sanitary sewer, storm sewer, water, electric, gas, oil, steam, data transmission, telephone, and cable television.

Warranty Period means the applicable time period according to clause GC 7.16.02, Warranty.

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

Working Area means all the lands and easements owned or acquired by the Owner for the construction of the Work.

Working Day means any Day,

- a) except Saturdays, Sundays and statutory holidays;
- b) except a Day as determined by the Contract Administrator, on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom, from proceeding with a Controlling Operation. For the purposes of this definition, this shall be a Day during which the Contractor cannot proceed with at least 60% of the normal labour and Equipment force effectively engaged on the Controlling Operation for at least 5 hours;
- c) except a Day on which the Contractor is prevented from proceeding with a Controlling Operation, as determined by the Contract Administrator by reason of,
 - i. any breach of the Contract by the Owner or if such prevention is due to the Owner, another contractor hired by the Owner, or an employee of any one of them, or by anyone else acting on behalf of the Owner.
 - ii. non-delivery of Owner supplied Materials.
 - iii. any cause beyond the reasonable control of the Contractor that can be substantiated by the Contractor to the satisfaction of the Contract Administrator.

Working Drawings or Working Plans means any Drawings or Plans prepared by the Contractor for the execution of the Work and may, without limiting the generality thereof, include formwork, falsework, and shoring plans; Roadway protection plans; shop drawings; shop plans; or erection diagrams.

GC 1.05 Ontario Traffic Manual

- .01 All references in the Contract Documents to the MUTCD, including all Parts and Divisions thereof, or MTO Traffic Control Manual for Roadway Work Operations, or Traffic Control Manual for Roadway Operations Field Edition are hereby deleted and replaced by all currently available books which make up the Ontario Traffic Manual.

GC 1.06 Final Acceptance

- .01 For the purposes of determining whether Final Acceptance has occurred, the Contract Administrator shall not take into account, in determining the discharge of the Contractor's obligations, any warranty obligation of the Contractor to the extent that the warranty extends beyond 24 months after Substantial Performance.

GC 1.07 Interpretation of Certain Words

- .01 The words "acceptable," "approval," "authorized," "considered necessary," "directed," "required," "satisfactory," or words of like import, shall mean approval of, directed, required, considered necessary, or authorized by and acceptable or satisfactory to the Contract Administrator, unless the context clearly indicates otherwise.

SECTION GC 2.0 - CONTRACT DOCUMENTS

GC 2.01 Reliance on Contract Documents

- .01 The Owner warrants that the information furnished in the Contract Documents can be relied upon with the following limitations or exceptions:
- a) Based on available information at the time of the contract, the location of all mainline underground Utilities that may affect the Work shall be shown to a tolerance of:
 - i. 1 m horizontal, and
 - ii. 0.3 m vertical
- .02 The Owner does not warrant or make any representation with respect to:
- a) interpretations of data or opinions expressed in any Subsurface Report available for the perusal of the Contractor, that are not included as part of the Contract Documents, and
 - b) other information specifically excluded from this warranty.

GC 2.02 Order of Precedence

- .01 In the event of any inconsistency or conflict in the contents of the following documents, such documents shall take precedence and govern in the following descending order:
- a) Agreement
 - b) Addenda
 - c) Special Provisions
 - d) Contract Drawings
 - e) Standard Specifications
 - f) Standard Drawings
 - g) Tender
 - h) Supplemental General Conditions
 - i) OPSS.MUNI 100 General Conditions of Contract
 - j) Working Drawings

Later dates shall govern within each of the above categories of documents.

- .02 In the event of any conflict among or inconsistency in the information shown on Drawings, the following rules shall apply:
- a) Dimensions shown in figures on a Drawing shall govern where they differ from dimensions scaled from the same Drawing;
 - b) Drawings of larger scale shall govern over those of smaller scale;
 - c) Detailed Drawings shall govern over general Drawings; and

- d) Drawings of a later date shall govern over those of an earlier date in the same series.
- .03 In the event of any inconsistency or conflict in the contents of Standard Specifications the following descending order of precedence shall govern:
- a) Owner's Standard Specifications
 - b) Ontario Provincial Standard Specifications
 - c) Other standards referenced in OPSSs and OPSDs (e.g., CSA, CGSB, ASTM, and ANSI).
- .04 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all.

SECTION GC 3.0 - ADMINISTRATION OF THE CONTRACT

GC 3.01 Contract Administrator's Authority

- .01 The Contract Administrator shall be the Owner's representative during construction and until the issuance of the Completion Certificate or the issuance of the Final Acceptance Certificate, whichever is later. All instructions to the Contractor, including instructions from the Owner, shall be issued by the Contract Administrator. The Contract Administrator shall have the authority to act on behalf of the Owner only to the extent provided in the Contract Documents.
- .02 All claims, disputes and other matters in question relating to the performance and the quality of the Work or the interpretation of the Contract Documents shall be referred to the Contract Administrator in writing by the Contractor.
- .03 The Contract Administrator may inspect the Work for its conformity with the Plans and Standard Specifications, and to record the necessary data to establish payment quantities under the schedule of tender quantities and unit prices or to make an assessment of the value of the Work completed in the case of a lump sum price Contract.
- .04 The Contract Administrator shall determine the amounts owing to the Contractor under the Contract and shall issue certificates for payment in such amounts as provided for in section GC 8.0, Measurement and Payment.
- .05 The Contract Administrator shall, with reasonable promptness, review and take appropriate action upon the Contractor's submissions such as shop drawings, product data, and samples in accordance with the Contract Documents so as to not cause delay in the schedule.
- .06 The Contract Administrator shall investigate all allegations of a Change in the Work made by the Contractor and issue appropriate instructions.
- .07 The Contract Administrator shall prepare Change Directives and Change Orders for the Owner's approval.
- .08 Upon written application by the Contractor, the Contract Administrator and the Contractor shall jointly conduct an inspection of the Work to establish the date of Substantial Performance of the Work or the date of Completion of the Work or both.
- .09 The Contract Administrator shall be, in the first instance, the interpreter of the Contract Documents and the judge of the performance thereunder by both parties to the Contract. Interpretations and decisions of the Contract Administrator shall be consistent with the intent of the Contract Documents and, in making these decisions, the Contract Administrator shall not show partiality to either party.
- .10 The Contract Administrator shall have the authority to reject any part of the Work or Material that does not conform to the Contract Documents.
- .11 In the event that the Contract Administrator determines that any part of the Work performed by the Contractor is defective, whether the result of poor workmanship the use of defective Material or damage through carelessness or other act or omission of the Contractor and whether or not incorporated in the Work or otherwise fails to conform to the Contract Documents, then the Contractor shall if directed by the Contract Administrator promptly, as directed by the Contract Administrator, remove the Work and replace, make good, or re-execute the Work at no additional cost to the Owner.
- .12 Any part of the Work destroyed or damaged by such removals, replacements, or re-executions shall be made good, promptly, at no additional cost to the Owner.

- .13 If, in the opinion of the Contract Administrator, it is not expedient to correct defective Work or Work not performed in accordance with the Contract Documents, the Owner may deduct from monies otherwise due to the Contractor the difference in value between the Work as performed and that called for by the Contract Documents amount that will be determined in the first instance by the Contract Administrator.
- .14 Notwithstanding any inspections made by the Contract Administrator or the issuance of any certificates or the making of any payment by the Owner, the failure of the Contract Administrator to reject any defective Work or Material shall not constitute acceptance of defective Work or Material.
- .15 The Contract Administrator shall have the authority to temporarily suspend the Work for such reasonable time as may be necessary:
 - a) to facilitate the checking of any portion of the Contractor's construction layout;
 - b) to facilitate the inspection of any portion of the Work; or
 - c) for the Contractor to remedy its non-compliance with any provisions of the Contract Documents.

The Contractor shall not be entitled to any compensation for suspension of the Work in these circumstances.
- .16 The Owner has the right to terminate the Contract for wilful or persistent violation by the Contractor or its workers of any applicable laws or bylaws, including but not limited to, the Occupational Health and Safety Act legislation and regulations, Workplace Safety and Insurance Board Act, and Regulation 347 of the Environmental Protection Act.
- .17 If the Contract Administrator determines that any worker employed on the Work is incompetent, as defined by the Occupational Health and Safety Act, or is disorderly, then the Contract Administrator shall provide written notice to the Contractor and the Contractor shall immediately remove the worker from the Working Area. Such worker shall not return to the Working Area without the prior written consent of the Contract Administrator.

GC 3.02 Working Drawings

- .01 The Contractor shall arrange for the preparation of clearly identified and dated Working Drawings as called for by the Contract Documents.
- .02 The Contractor shall submit Working Drawings to the Contract Administrator with reasonable promptness and in orderly sequence so as to not cause delay in the Work. If either the Contractor or the Contract Administrator so requests, they shall jointly prepare a schedule fixing the dates for submission and return of Working Drawings. Working Drawings shall be submitted in printed form. At the time of submission the Contractor shall notify the Contract Administrator in writing of any deviations from the Contract Documents that exist in the Working Drawings.
- .03 The Contract Administrator shall review and return Working Drawings in accordance with an agreed upon schedule, or otherwise, with reasonable promptness so as not to cause delay.
- .04 The Contract Administrator's review shall be to check for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the Working Drawings or of responsibility for meeting all requirements of the Contract Documents, unless a deviation on the Working Drawings has been approved in writing by the Contract Administrator.

- .05 The Contractor shall make any changes in Working Drawings that the Contract Administrator may require to make the Working Drawings consistent with the Contract Documents and resubmit, unless otherwise directed by the Contract Administrator. When resubmitting, the Contractor shall notify the Contract Administrator in writing of any revisions other than those requested by the Contract Administrator.
- .06 Work related to the Working Drawings shall not proceed until the Working Drawings have been signed and dated by the Contract Administrator.
- .07 The Contractor shall keep one set of the reviewed Working Drawings, marked as above, at the site at all times.

GC 3.03 Right of the Contract Administrator to Modify Methods and Equipment

- .01 The Contractor shall, when requested in writing, make alterations in the method, Equipment, or work force at any time the Contract Administrator considers the Contractor's actions to be unsafe, or damaging to either the Work or existing facilities or the environment
- .02 The Contractor shall, when requested in writing, alter the sequence of its operations on the Contract so as to avoid interference with work being performed by others.
- .03 Notwithstanding the foregoing, the Contractor shall ensure that all necessary safety precautions and protection are maintained throughout the Work.

GC 3.04 Emergency Situations

- .01 The Contract Administrator has the right to determine the existence of an emergency situation and, when such an emergency situation is deemed to exist, the Contract Administrator may instruct the Contractor to take action to remedy the situation. If the Contractor does not take timely action or, if the Contractor is not available, the Contract Administrator may direct others to remedy the situation.
- .02 If the emergency situation was the fault of the Contractor, the remedial Work shall be done at the Contractor's expense. If the emergency situation was not the fault of the Contractor, the Owner shall pay for the remedial Work.

GC 3.05 Layout Information

- .01 The Contract Administrator shall provide background information, including without limitation, baseline and benchmark information, to facilitate the general location, alignment, elevation and layout of the Work.
- .02 The Contract Administrator shall provide pre and post construction inventories of all Monuments, etc. that are located within the Working Area.
- .03 The Owner shall be responsible only for the correctness of the layout information provided by the Contract Administrator.

GC 3.06 Extension of Contract Time

- .01 An application for an extension of Contract Time shall be made in writing by the Contractor to the Contract Administrator as soon as the need for such extension becomes evident and at least 15 Days prior to the expiration of the Contract Time. The application for an extension of Contract Time shall enumerate the reasons, and state the length of extension required.

- .02 Circumstances suitable for consideration of an extension of Contract Time include the following:
- a) Delays, subsection GC 3.07.
 - b) Changes in the Work, clause GC 3.10.01.
 - c) Extra Work, clause GC 3.10.02.
 - d) Additional Work, clause GC 3.10.03.
- .03 The Contract Administrator shall, in considering an application for an extension to the Contract Time, take into account whether the delays, Changes in the Work, Extra Work, or Additional Work involve a Controlling Operation.
- .04 The Contract Time shall be extended for such additional time as may be recommended by the Contract Administrator and deemed fair and reasonable by the Owner.
- .05 The terms and conditions of the Contract shall continue for such extension of Contract Time.

GC 3.07 Delays

- .01 If the Contractor is delayed in the performance of the Work by,
- a) war, blockades, and civil commotions;
 - b) errors in the Contract Documents;
 - c) an act or omission of the Owner or Contract Administrator, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents;
 - d) a stop work order issued by a court or public authority, provided that such order was not issued as the result of an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly;
 - e) the Contract Administrator giving notice under section GC 7, Suspension of Work;
 - f) Abnormal Weather; or
 - g) archaeological finds, in accordance with subsection GC 3.15, Archaeological Finds,
- then the Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay, provided that in the case of an application for an extension of Contract Time due to Abnormal Weather, the Contractor shall, with the Contractor's application, submit evidence from Environment Canada in support of such application. Extension of Contract Time may be granted in accordance with subsection GC 3.06, Extension of Contract Time.
- .02 If the Work is delayed by labour disputes, strikes or lock-outs, including lock-outs decreed or recommended to its members by a recognized contractor's association, of which the Contractor is a member or to which the Contractor is otherwise bound, which are beyond the Contractor's control, then the Contract Time shall be extended in accordance with subsection GC 3.06, Extension of Contract Time.

- .03 In no case shall the extension of Contract Time be less than the time lost as the result of the event causing the delay, unless a shorter extension is agreed to by the Contractor. The Contractor shall not be entitled to payment for costs incurred as the result of such delays unless such delays are the result of actions by the Owner.
- .04 The Contractor shall not be entitled to payment for the cost of delays incurred as a result of a dispute between the Contractor and Owner. The Contractor shall execute the Work and may pursue resolution of the dispute in accordance with subsection GC 3.13, Claims, Negotiations, Mediations.

GC 3.08 Assignment of Contract

- .01 The Contractor shall not assign the Contract, either in whole or in part, without the prior written consent of the Owner.

GC 3.09 Subcontracting by the Contractor

- .01 Subject to clause GC 3.09.03, Subcontracting by the Contractor, the Contractor may subcontract any part of the Work, in accordance with the Contract Documents and any limitations specified therein.
- .02 The Contractor shall notify the Contract Administrator in writing in 10 Days prior to the start of construction of the intention to subcontract. Such notification shall identify the part of the Work, and the Subcontractor with whom it is intended.
- .03 The Contract Administrator shall, within 5 Days of receipt of such notification, accept or reject the intended Subcontractor. The rejection shall be in writing and shall include the reasons for the rejection.
- .04 The Contractor shall not, without the written consent of the Owner, change a Subcontractor who has been engaged in accordance with this subsection.
- .05 The Contractor shall preserve and protect the rights of the Owner under the Contract Documents with respect to that part of the Work to be performed under subcontract and shall,
 - a) enter into agreements with the intended Subcontractors to require them to perform their Work in accordance with the Contract Documents; and
 - b) be as fully responsible to the Owner for acts and omissions of the Contractor's Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the Contractor.
- .06 The Owner's consent to subcontracting by the Contractor shall not be construed to relieve the Contractor from any obligation under the Contract and shall not impose any liability upon the Owner. Nothing contained in the Contract Documents shall create a contractual relationship between a Subcontractor and the Owner.

GC 3.10 Changes

GC 3.10.01 Changes in the Work

- .01 The Owner, or the Contract Administrator where so authorized, may, by order in writing, make a Change in the Work without invalidating the Contract. The Contractor shall not be required to proceed with a Change in the Work until in receipt of a Change Order or Change Directive. Upon the receipt of such Change Order or Change Directive the Contractor shall proceed with the Change in the Work.

- .02 The Contractor may apply for an extension of Contract Time according to the terms of clause GC 3.06, Extension of Contract Time.
- .03 If the Change in the Work relates solely to quantities, payment for that part of the Work shall be made according to the conditions specified in clause GC 8.01.02, Variations in Tender Quantities. If the Change in the Work does not solely relate to quantities, then either the Owner or the Contractor may initiate negotiations upwards or downwards for the adjustment of the Contract price in respect of the Change in the Work pursuant to subsection GC 3.13, Claims, Negotiations, Mediation or payment may be made according to the conditions contained in clause GC 8.02.05, Payment on a Time and Material Basis.

GC 3.10.02 Extra Work

- .01 The Owner, or Contract Administrator where so authorized, may instruct the Contractor to perform Extra Work without invalidating the Contract. The Contractor shall not be required to proceed with the Extra Work until in receipt of a Change Order or Change Directive. Upon receipt of such Change Order or Change Directive the Contractor shall proceed with the Extra Work.
- .02 The Contractor may apply for an extension of Contract Time according to the terms of clause GC 3.06, Extension of Contract Time.
- .03 Either the Owner or Contractor may initiate negotiations upwards or downwards for the payment for the Extra Work pursuant to subsection GC 3.13, Claims, Negotiations, Mediation, or payment may be made according to the conditions contained in clause GC 8.02.05, Payment on a Time and Material Basis.

GC 3.10.03 Additional Work

- .01 The Owner, or Contract Administrator where so authorized, may request the Contractor to perform Additional Work without invalidating the Contract. If the Contractor agrees to perform Additional Work, the Contractor shall proceed with such Additional Work upon receipt of a Change Order.
- .02 The Contractor may apply for an extension of Contract Time according to the terms of subsection GC 3.06, Extension of Contract Time.
- .03 Payment for the Additional Work may be negotiated pursuant to subsection GC 3.13, Claims, Negotiations, Mediation, or payment may be made according to the conditions contained in clause GC 8.02.05, Payment on a Time and Material Basis.

GC 3.11 Notices

- .01 Any notice permitted or required to be given to the Contract Administrator or the Superintendent in respect of the Work shall be deemed to have been given to and received by the addressee on the date of delivery if delivered by hand, email, or by facsimile transmission and on the fifth Day after the date of mailing, if sent by mail.
- .02 The Contractor and the Owner shall provide each other with the mail and email addresses; cell phone, and telephone numbers for the Contract Administrator and the Superintendent at the commencement of the Work, and update as necessary.
- .03 In the event of an emergency situation or other urgent matter the Contract Administrator or the Superintendent may give a verbal notice, provided that such notice is confirmed in writing within 2 Days.
- .04 Any notice permitted or required to be given to the Owner or the Contractor shall be given in accordance with the notice provision of the Contract.

GC 3.12 Use and Occupancy of the Work Prior to Substantial Performance

- .01 Where it is not contemplated elsewhere in the Contract Documents, the Owner may use or occupy the Work or any part thereof prior to Substantial Performance, provided that at least 30 Days written notice has been given to the Contractor.
- .02 The use or occupancy of the Work or any part thereof by the Owner prior to Substantial Performance shall not constitute an acceptance of the Work or parts so occupied. In addition, the use or occupancy of the Work shall not relieve the Contractor or the Contractor's Surety from any liability that has arisen, or may arise, from the performance of the Work in accordance with the Contract Documents. The Owner shall be responsible for any damage that occurs because of the Owner's use or occupancy. Such use or occupancy of any part of the Work by the Owner does not waive the Owner's right to charge the Contractor liquidated damages in accordance with the terms of the Contract.

GC 3.13 Claims, Negotiations, Mediation

GC 3.13.01 Continuance of the Work

- .01 Unless the Contract has been terminated or completed, the Contractor shall in every case, after serving or receiving any notification of a claim or dispute, verbal or written, continue to proceed with the Work with due diligence and expedition. It is understood by the parties that such action shall not jeopardize any claim it may have.

GC 3.13.02 Record Keeping

- .01 Immediately upon commencing Work that may result in a claim, the Contractor shall keep Daily Work Records during the course of the Work, sufficient to substantiate the Contractor's claim, and the Contract Administrator shall keep Daily Work Records to be used in assessing the Contractor's claim, all in accordance with clause GC 8.02.07, Records.
- .02 The Contractor and the Contract Administrator shall attempt to reconcile their respective Daily Work Records on a daily basis, to simplify review of the claim, when submitted. If the Contractor and the Contract Administrator fail to reconcile their respective Daily Work Records, then the Contractor shall submit its Daily Work Records as part of its claim, whereby the resolution of the dispute about the Daily Work Records shall not be resolved until there is a resolution of the claim.
- .03 The keeping of Daily Work Records by the Contract Administrator or the reconciling of such Daily Work Records with those of the Contractor shall not be construed to be acceptance of the claim.

GC 3.13.03 Claims Procedure

- .01 The Contractor shall give verbal notice of any situation that may lead to a claim for additional payment immediately upon becoming aware of the situation.
- .02 The Contractor shall provide written notice within 7 Days of the commencement of any part of the Work that may be affected by the situation.
- .03 The Contractor shall submit detailed claims as soon as reasonably possible and in any event no later than 30 Days or such additional/other/longer time as mutually agreed after completion of the Work affected by the situation. The detailed claim shall:
 - a) identify the item or items in respect of which the claim arises;

- b) state the grounds, contractual or otherwise, upon which the claim is made; and
 - c) include the Records maintained by the Contractor supporting such claim.
- .04 Within 30 Days of the receipt of the Contractor's detailed claim, the Contract Administrator may request the Contractor to submit any further and other particulars as the Contract Administrator considers necessary to assess the claim. The Contractor shall submit the requested information within 30 Days of receipt of such request.
- .05 Within 90 Days of receipt of the detailed claim, the Contract Administrator shall advise the Contractor, in writing, of the Contract Administrator's opinion with regard to the validity of the claim.

GC 3.13.04 Negotiations

- .01 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, open and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- .02 Should the Contractor disagree with the opinion given in clause GC 3.13.03.05, with respect to any part of the claim, the Contract Administrator shall enter into negotiations with the Contractor to resolve the matters in dispute. Where a negotiated settlement cannot be reached and it is agreed that payment cannot be made on a Time and Material basis in accordance with clause GC 8.02.05, Payment on a Time and Material Basis, the parties shall proceed in accordance with clause GC 3.13.05, Mediation, or subsection GC 3.14, Arbitration.
- .03 Prior to the expiry of 30 Business Days from the date of receipt of the Contractors claim, the Contract Administrator shall provide a written response to the Contractor stating the Contract Administrator's final price for the Change Order and an explanation of the rationale and basis of the Contract Administrator's position which shall be deemed to be the initial site response.

GC 3.13.05 Mediation

- .01 If a claim is not resolved satisfactorily through the negotiation stage noted in clause GC 3.13.04, Negotiations, within a period of 30 Days following the opinion given in clause GC 3.13.03.05, and the Contractor wishes to pursue the issue further, the parties may, upon mutual agreement, utilize the services of an independent third party mediator.
- .02 The mediator shall be mutually agreed upon by the Owner and Contractor.
- .03 The mediator shall be knowledgeable regarding the area of the disputed issue. The mediator shall meet with the parties together or separately, as necessary, to review all aspects of the issue. In a final attempt to assist the parties in resolving the issue themselves prior to proceeding to arbitration the mediator shall provide, without prejudice, a non-binding recommendation for settlement.
- .04 The review by the mediator shall be completed within 90 Days following the opinion given in clause GC 3.13.03.05.
- .05 Each party is responsible for its own costs related to the use of the third party mediator process. The cost of the third party mediator shall be equally shared by the Owner and Contractor.

GC 3.13.06 Payment

- .01 Payment of the claim shall be made no later than 30 Days after the date of resolution of the claim or dispute. Such payment shall be made according to the terms of section GC 8.0, Measurement and Payment.

GC 3.13.07 Rights of Both Parties

.01 It is agreed that no action taken under subsection GC 3.13, Claims, Negotiations, Mediation, by either party shall be construed as a renunciation or waiver of any of the rights or recourse available to the parties, provided that the requirements set out in this subsection are fulfilled.

GC 3.14 Arbitration

GC 3.14.01 Conditions of Arbitration

.01 If a claim is not resolved satisfactorily through the negotiation stage noted in clause GC 3.13.04, Negotiations, or the mediation stage noted in clause GC 3.13.05, Mediation, either party may invoke the provisions of subsection GC 3.14, Arbitration, by giving written notice to the other party.

.02 Notification that arbitration shall be implemented to resolve the issue shall be communicated in writing as soon as possible and no later than 60 Days following the opinion given in clause GC 3.13.03.05. Where the use of a third party mediator was implemented, notification shall be within 120 Days of the opinion given in clause GC 3.13.03.05.

.03 The parties shall be bound by the decision of the arbitrator.

.04 The rules and procedures of the Arbitration Act, 1991, S.O. 1991, c.17, as amended, shall apply to any arbitration conducted hereunder except to the extent that they are modified by the express provisions of subsection GC 3.14, Arbitration.

GC 3.14.02 Arbitration Procedure

.01 The following provisions are to be included in the agreement to arbitrate and are subject only to such right of appeal as exist where the arbitrator has exceeded his or her jurisdiction or have otherwise disqualified him or herself:

- a) All existing actions in respect of the matters under arbitration shall be stayed pending arbitration;
- b) All outstanding claims and matters to be settled are to be set out in a schedule to the agreement. Only such claims and matters as are in the schedule shall be arbitrated; and
- c) Before proceeding with the arbitration, the Contractor shall confirm that all matters in dispute are set out in the schedule.

GC 3.14.03 Appointment of Arbitrator

.01 The arbitrator shall be mutually agreed upon by the Owner and Contractor to adjudicate the dispute.

.02 Where the Owner and Contractor cannot agree on a sole arbitrator within 30 Days of the notification of arbitration noted in clause GC 3.14.01.02, the Owner and the Contractor shall each choose an appointee within 37 Days of the notice of arbitration.

.03 The appointees shall mutually agree upon an arbitrator to adjudicate the dispute within 15 Days after the last appointee was chosen or they shall refer the matter to the ADR Institute of Ontario (ADRIO), which may select an arbitrator to adjudicate the dispute within 7 Days of being requested to do so.

.04 The arbitrator shall not be interested financially in the Contract nor in either party's business and shall not be employed by either party.

.05 The arbitrator may appoint independent experts and any other persons to assist him or her.

- .06 The arbitrator is not bound by the rules of evidence that govern the trial of cases in court but may hear and consider any evidence that the arbitrator considers relevant.
- .07 The hearing shall commence within 90 Days of the appointment of the arbitrator.

GC 3.14.04 Costs

- .01 The arbitrator's fee shall be equally shared by the Owner and the Contractor.
- .02 The fees of any independent experts and any other persons appointed to assist the arbitrator shall be shared equally by the Owner and the Contractor.
- .03 The arbitration hearing shall be held in a place mutually agreed upon by both parties or in the event the parties do not agree, a site shall be chosen by the arbitrator. The cost of obtaining appropriate facilities shall be shared equally by the Owner and the Contractor.
- .04 The arbitrator may, in his or her discretion, award reasonable costs, related to the arbitration.

GC 3.14.05 The Decision

- .01 The reasoned decision shall be made in writing within 90 Days of the conclusion of the hearing. An extension of time to make a decision may be granted with consent of both parties. Payment shall be made in accordance with clause GC 3.13.06, Payment.

GC 3.15 Archaeological Finds

- .01 If the Contractor's operations expose any items that may indicate an archaeological find, such as but not limited to building remains, hardware, accumulations of bones, pottery, or arrowheads, the Contractor shall immediately notify the Contract Administrator and suspend operations within the area identified by the Contract Administrator. Notification may be verbal provided that such notice is confirmed in writing within 2 Days. Work shall remain suspended within that area until otherwise directed by the Contract Administrator in writing, in accordance with subsection GC 7.09, Suspension of Work.
- .02 Any delay in the completion of the Contract that is caused by such a suspension of Work shall be considered to be beyond the Contractor's control in accordance with clause GC 3.07.01.
- .03 Any Work directed or authorized in connection with an archaeological find shall be considered as Extra Work in accordance with clause GC 3.10.02, Extra Work.
- .04 The Contractor shall take all reasonable action to minimize additional costs that may accrue as a result of any work stoppage.

SECTION GC 4.0 - OWNER'S RESPONSIBILITIES AND RIGHTS

GC 4.01 Working Area

- .01 The Owner shall acquire all property rights that are deemed necessary by the Owner for the construction of the Work, including temporary working easements, and shall indicate the full extent of the Working Area on the Contract Drawings.

GC 4.02 Approvals and Permits

- .01 The Owner shall pay for all plumbing and building permits.
- .02 The Owner shall obtain and pay for all permits, licences, and certificates solely required for the design of the Work.

GC 4.03 Management and Disposition of Materials

- .01 The Owner shall identify in the Contract Documents the Materials to be moved within or removed from the Working Area and any characteristics of those Materials that necessitates special Materials management and disposition.
- .02 In accordance with regulations under the Occupational Health and Safety Act, R.S.O. 1990, c.O.1, as amended, the Owner advises that,
 - a) the designated substances silica, lead, and arsenic are generally present throughout the Working Area occurring naturally or as a result of vehicle emissions;
 - b) the designated substance asbestos may be present in cement products, asphalt, and conduits for Utilities;
 - c) the following hazardous materials are ordinarily present in construction activities: limestone, gypsum, marble, mica, and Portland cement; and
 - d) exposure to these substances may occur as a result of activities by the Contractor such as sweeping, grinding, crushing, drilling, blasting, cutting, and abrasive blasting.
- .03 The Owner shall identify in the Contract Documents any designated substances or hazardous materials other than those identified above and their location in the Working Area.
- .04 If the Owner or Contractor discovers or is advised of the presence of designated substances or hazardous Materials that are in addition to those listed in clause GC 4.03.02, or not clearly identified in the Contract Documents according to clause GC 4.03.03, then verbal notice shall be provided to the other party immediately with written confirmation within 2 Days. The Contractor shall stop Work in the area immediately and shall determine the necessary steps required to complete the Work in accordance with applicable legislation and regulations.
- .05 The Owner shall be responsible for any reasonable additional costs of removing, managing and disposing of any Material not identified in the Contract Documents, or where conditions exist that could not have been reasonably foreseen at the time of tendering. All work under this paragraph shall be deemed to be Extra Work.

- .06 Prior to commencement of the Work, the Owner shall provide to the Contractor a list of those products controlled under the Workplace Hazardous Materials Information System (WHMIS), that the Owner may supply or use on the Contract, together with copies of the Safety Data Sheets for these products. All containers used in the application of products controlled under WHMIS shall be labelled. The Owner shall notify the Contractor in writing of changes to the list and provide relevant Safety Data Sheets.
- .07 Unless expressly permitted in the Contract Documents, the Contractor shall not bring onto the Work Area any designated substance or hazardous Material per OSHA without the prior written authorization of the Contract Administrator.
- .08 The Contractor shall use all reasonable care to avoid spilling or disturbing any designated substances or hazardous Material per OSHA.

GC 4.04 Construction Affecting Railway Property

- .01 The Owner shall pay the costs of all flagging and other traffic control measures required and provided by the railway company unless such costs are solely a function of the Contractor's chosen method of completing the Work.
- .02 Every precaution shall be taken by the Contractor to protect all railway property at track crossings; or otherwise, on which construction operations are to take place in accordance with the terms of this Contract.
- .03 The Contractor shall be required to conduct the construction operations in such a manner as to avoid a possibility of damaging any railway property in the vicinity of the Works. Every reasonable precaution shall be taken by the Contractor to ensure the safety of the workers, Subcontractors, and Equipment, as well as railway property throughout the duration of the Contract.

GC 4.05 Default by the Contractor

- .01 If the Contractor fails to commence the Work within 14 Days of a formal order to commence Work signed by the Contract Administrator or, upon commencement of the Work, should neglect to prosecute the Work properly or otherwise fails to comply with the requirements of the Contract and, if the Contract Administrator has given a written statement to the Owner and Contractor that sufficient cause exists to justify such action, the Owner may, without prejudice to any other right or remedy the Owner may have, notify the Contractor in writing that the Contractor is in default of the Contractor's contractual obligations and instruct the Contractor to correct the default in the 5 Working Days immediately following the receipt of such notice.
- .02 If the Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the Contractor's insolvency or if a receiver is appointed because of the Contractor's insolvency, the Owner may, without prejudice to any other right or remedy the Owner may have, by giving the Contractor or receiver or trustee in bankruptcy notice in writing, terminate the Contract.

GC 4.06 Contractor's Right to Correct a Default

- .01 The Contractor shall have the right within the 5 Working Days following the receipt of a notice of default to correct the default and provide the Owner with satisfactory proof that appropriate corrective measures have been taken.
- .02 If the Owner determines that the correction of the default cannot be completed within the 5 Working Days following receipt of the notice, the Contractor shall not be in default if the Contractor,
 - a) commences the correction of the default within the 5 Working Days following receipt of the notice;

- b) provides the Owner with a schedule acceptable to the Owner for the progress of such correction;
and
- c) completes the correction in accordance with such schedule.

GC 4.07 Owner's Right to Correct Default

- .01 If the Contractor fails to correct the default within the time specified in subsection GC 4.06, Contractor's Right to Correct a Default, or subsequently agreed upon, the Owner, without prejudice to any other right or remedy the Owner may have, may correct such default and deduct the cost thereof, as certified by the Contract Administrator, from any payment then or thereafter due to the Contractor.

GC 4.08 Termination of Contractor's Right to Continue the Work

- .01 Where the Contractor fails to correct a default within the time specified in subsection GC 4.06, Contractor's Right to Correct a Default, or subsequently agreed upon, the Owner, without prejudice to any other right or remedy the Owner may have, may terminate the Contractor's right to continue the Work in whole or in part by giving written notice to the Contractor.
- .02 If the Owner terminates the Contractor's right to continue with the Work in whole or in part, the Owner shall be entitled to,
 - a) take possession of the Working Area or that portion of the Working Area devoted to that part of the Work terminated;
 - b) utilize any Material within the Working Area;
 - d) withhold further payments to the Contractor with respect to the Work or the portion of the Work withdrawn from the Contractor until the Work or portion thereof withdrawn is completed;
 - d) charge the Contractor the additional cost over the Contract price of completing the Work or portion thereof withdrawn from the Contractor, as certified by the Contract Administrator and any additional compensation paid to the Contract Administrator for such additional service arising from the correction of the default;
 - e) charge the Contractor a reasonable allowance, as determined by the Contract Administrator, to cover correction to the Work performed by the Contractor that may be required under subsection GC 7.16, Warranty;
 - f) charge the Contractor for any damages the Owner sustained as a result of the default; and
 - g) charge the Contractor the amount by which the cost of corrections to the Work under subsection GC 7.16, Warranty, exceeds the allowance provided for such corrections.

GC 4.09 Final Payment to Contractor

- .01 If the Owner's cost to correct and complete the Work in whole or in part is less than the amount withheld from the Contractor under subsection GC 4.08, Termination of Contractor's Right to Continue the Work, the Owner shall pay the balance to the Contractor as soon as the final accounting for the Contract is complete.

GC 4.10 Termination of the Contract

- .01 Where the Contractor is in default of the Contract the Owner shall, without prejudice to any other right or remedy the Owner may have, terminate the Contract by giving written notice of termination to the Contractor, the Surety, and any trustee or receiver acting on behalf of the Contractor's estate or creditors.
- .02 If the Owner elects to terminate the Contract, the Owner shall provide the Contractor and the trustee or receiver with a complete accounting to the date of termination.

GC 4.11 Continuation of Contractor's Obligations

- .01 The Contractor's obligation under the Contract as to quality, correction, and warranty of the Work performed prior to the time of termination of the Contract or termination of the Contractor's right to continue with the Work in whole or in part shall continue to be in force after such termination.

GC 4.12 Use of Performance Bond

- .01 If the Contractor is in default of the Contract and the Contractor has provided a Performance Bond, the provisions of section GC 4.0, Owner's Responsibilities and Rights, shall be exercised in accordance with the conditions of the Performance Bond.

GC 4.13 Payment Adjustment

- .01 If any situation should occur in the performance of the Work that would result in a Change in the Work, the Owner shall be entitled to an adjustment and those adjustments shall be managed in accordance with clause GC 3.10.01, Changes in the Work.

SECTION GC 5.0 - MATERIAL

GC 5.01 Supply of Material

- .01 All Material necessary for the proper completion of the Work, except that listed as being supplied by the Owner, shall be supplied by the Contractor. The Contract price for the appropriate tender items shall be deemed to include full compensation for the supply and delivery of such Material.

GC 5.02 Quality of Material

- .01 All Material supplied by the Contractor shall be new, unless otherwise specified in the Contract Documents.
- .02 Material supplied by the Contractor shall conform to the requirements of the Contract.
- .03 As specified in the Contract Documents or as requested by the Contract Administrator, the Contractor shall make available, for inspection or testing, a sample of any Material to be supplied by the Contractor.
- .04 The Contractor shall obtain for the Contract Administrator the right to enter onto the premises of the Material manufacturer or supplier to carry out such inspection, sampling, and testing as specified in the Contract Documents or as requested by the Contract Administrator.
- .05 The Contractor shall notify the Contract Administrator of the sources of supply sufficiently in advance of the Material shipping dates to enable the Contract Administrator to perform the required inspection, sampling, and testing.
- .06 The Owner shall not be responsible for any delays to the Contractor's operations where the Contractor fails to give sufficient advance notice to the Contract Administrator to enable the Contract Administrator to carry out the required inspection, sampling, and testing before the scheduled shipping date.
- .07 The Contractor shall not change the source of supply of any Material without the written authorization of the Contract Administrator.
- .08 Material that is not specified shall be of a quality best suited to the purpose required, and the use of such Material shall be subject to the approval of the Contract Administrator.
- .09 All Material inspection, sampling, and testing shall be carried out on random basis in accordance with the standard inspection or testing methods required for the Material. Any approval given by the Contract Administrator for the Materials to be used in the Work based upon the random method shall not relieve the Contractor from the responsibility of incorporating Material that conforms to the Contract Documents into the Work or properly performing the Contract and of any liability arising from the failure to properly perform as specified in the Contract Documents.

GC 5.03 Rejected Material

- .01 Rejected Material shall be removed from the Working Area expeditiously after the notification to that effect from the Contract Administrator. Where the Contractor fails to comply with such notice, the Contract Administrator may cause the rejected Material to be removed from the Working Area and disposed of, in what the Contract Administrator considers to be the most appropriate manner, and the Contractor shall pay the costs of disposal and the appropriate overhead charges.

GC 5.04 Substitutions

- .01 Where the Contract Documents require the Contractor to supply a Material designated by a trade or other name, the Tender shall be based only upon supply of the Material so designated, that shall be regarded as the standard of quality required by the Contract Documents. After the acceptance of the Tender, the Contractor may apply to the Contract Administrator to substitute another Material identified by a different trade or other name for the Material designated as aforesaid. The application shall be in writing and shall state the price for the proposed substitute Material designated as aforesaid, and such other information as the Contract Administrator may require.
- .02 Rulings on a proposed substitution shall not be made prior to the acceptance of the Tender. Substitutions shall not be made without the prior approval of the Contract Administrator. The approval or rejection of a proposed substitution shall be at the discretion of the Contract Administrator.
- .03 If the proposed substitution is approved by the Contract Administrator, the Contractor shall be entitled to the first \$1,000 of the aggregate saving in cost by reason of such substitution and to 50% of any additional saving in cost in excess of such \$1,000. Each such approval shall be conveyed to the Contractor in writing or by issuance of a Certificate of Equality on the Owner's standard form of "Certification of Equality" and, if any adjustment to the Contract price is made by reason of such substitution, a Change Order shall be issued as well.

GC 5.05 Owner Supplied Material

GC 5.05.01 Ordering of Excess Material

- .01 Where Material is supplied by the Owner and where this Material is ordered by the Contractor in excess of the amount specified to complete the Work, such excess Material shall become the property of the Contractor on completion of the Work and shall be charged to the Contractor at cost plus applicable overheads.

GC 5.05.02 Care of Material

- .01 The Contractor shall, in advance of receipt of shipments of Material supplied by the Owner, provide adequate and proper storage facilities acceptable to the Contract Administrator, and on the receipt of such Material shall promptly place it in storage, except where it is to be incorporated forthwith into the Work.
- .02 The Contractor shall be responsible for acceptance of Material supplied by the Owner, at the specified delivery point and for its safe handling and storage. If such Material is damaged while under the control of the Contractor, it shall be replaced or repaired by the Contractor at no expense to the Owner, and to the satisfaction of the Contract Administrator. If such Material is rejected by the Contract Administrator for reasons that are not the fault of the Contractor, it shall remain in the care and at the risk of the Contractor until its disposition has been determined by the Contract Administrator.
- .03 Where Material supplied by the Owner arrives at the delivery point in a damaged condition or where there are discrepancies between the quantities received and the quantities shown on the bills of lading, the Contractor shall immediately report such damage or discrepancies to the Contract Administrator who shall arrange for an immediate inspection of the shipment and provide the Contractor with a written release from responsibility for such damage or deficiencies. Where damage or deficiencies are not so reported, it shall be assumed that the shipment arrived in good condition and order, and any damage or deficiencies reported thereafter shall be made good by the Contractor at no extra cost to the Owner.

- .04 The full amount of Material supplied by the Owner in each shipment shall be accounted for by the Contractor and such Material shall be at the risk of the Contractor after taking delivery. Such Material shall not, except with the written permission of the Contract Administrator, be used by the Contractor for purposes other than the performance of the Work under the Contract.
- .05 Empty reels, crates, containers, and other type of packaging from Material supplied by the Owner shall become the property of the Contractor when they are no longer required for their original purpose and shall be disposed of by the Contractor at the Contractor's expense unless otherwise specified in the Contract Documents.
- .06 Immediately upon receipt of each shipment, the Contractor shall provide the Contract Administrator copies of bills of lading, or such other documentation the Contract Administrator may require to substantiate and reconcile the quantities of Material received.
- .07 Where Material supplied by the Owner is ordered and stockpiled prior to the award of the Contract, the Contractor shall, at no extra cost to the Owner, immediately upon commencement of operations, check the Material, report any damage or deficiencies to the Contract Administrator and take charge of the Material at the stockpile site. Where damage or deficiencies are not so recorded by the Contractor, it shall be assumed that the stockpile was in good condition and order when the Contractor took charge of it, and any damage or deficiencies reported thereafter shall be made good by the Contractor at no extra cost to the Owner.

SECTION GC 6.0 - INSURANCE, PROTECTION AND DAMAGE

GC 6.01 Protection of Work, Persons and Property

- .01 The Contractor, the Contractor's agents, and all workers employed by or under the control of the Contractor, including Subcontractors, shall protect the Work, persons, and property from damage or injury. The Contractor shall be responsible for all losses and damage that may arise as the result of the Contractor's operations under the Contract, unless indicated to the contrary below.
- .02 The Contractor is responsible for the full cost of any necessary temporary protective Work and the restoration of all damage where the Contractor damages the Work or property in the performance of the Contract. If the Contractor is not responsible for the damage that occurs to the Work or property, the Contractor shall restore such damage, and such Work and payment shall be administered according to these General Conditions.
- .03 The Contractor shall immediately inform the Contract Administrator of all damage and injuries that occur during the term of the Contract. The Contractor shall then investigate and report back to the Contract Administrator within 15 Days of occurrence of incident, or as soon as possible. The Contract Administrator may conduct its own investigation and the Contractor shall provide all assistance to the Contract Administrator as may be necessary for that purpose.
- .04 The Contractor shall not be responsible for loss and damage that occurs as a result of,
 - a) war;
 - b) blockades and civil commotions;
 - c) errors in the Contract Documents; or
 - d) acts or omissions of the Owner, the Contract Administrator, their agents and employees, or others not under the control of the Contractor, but within the Working Area with the Owner's permission.
- .05 The Contractor and the Contractor's Surety shall not be released from any term or provision of any responsibility, obligation, or liability under the Contract or waive or impair any of the rights of the Owner, except by a release duly executed by the Owner.

GC 6.02 Indemnification

- .01 The Contractor shall indemnify and hold harmless the Owner and the Contract Administrator, their elected officials, agents, officers, and employees from and against all claims, demands, losses, expenses, costs, damages, actions, suits, or proceedings by third parties, hereinafter called "claims", directly or indirectly arising or alleged to arise out of the performance of or the failure to perform the Work, provided such claims are,
 - a) attributable to bodily injury, sickness, disease, or death or to damage to or destruction of tangible property;
 - b) caused by negligent acts or omissions of the Contractor or anyone for whose acts the Contractor may be liable; and
 - c) made in writing within a period of 6 years from the date of Substantial Performance of the Work as set out in the Certificate of Substantial Performance of the Work or, where so specified in the Contract Documents, from the date of certification of Final Acceptance.

- .02 The Contractor shall indemnify and hold harmless the Owner from all and every claim for damages, royalties or fees for the infringement of any patented invention or copyright occasioned by the Contractor in connection with the Work performed or Material furnished by the Contractor under the Contract.
- .03 The Owner expressly waives the right to indemnity for claims other than those stated in clauses GC 6.02.01 and GC 6.02.02.
- .04 The Owner shall indemnify and hold harmless the Contractor, their elected officials, agents, officers, and employees from and against all claims, demands, losses, expenses, costs, damages, actions, suits, or proceedings arising out of the Contractor's performance of the Contract that are attributable to a lack of or defect in title or an alleged lack of or defect in title to the Working Area.
- .05 The Contractor expressly waives the right to indemnity for claims other than those stated in clause GC 6.02.04.

GC 6.03 Contractor's Insurance

GC 6.03.01 General

- .01 Without restricting the generality of subsection GC 6.02, Indemnification, the Contractor shall provide, maintain, and pay for the insurance coverages listed under clauses GC 6.03.02 and GC 6.03.03. Insurance coverage in clauses GC 6.03.04, GC 6.03.05, and GC 6.03.06 shall only apply when so specified in the Contract Documents.
- .02 The Contractor shall provide the Contract Administrator with an original Certificate of Insurance for each type of insurance coverage that is required by the Contract Documents. The Contractor shall ensure that the Contract Administrator is, at all times in receipt of a valid Certificate of Insurance for each type of insurance coverage, in such amounts as specified in the Contract Documents. The Contractor will not be permitted to commence Work until the Contract Administrator is in receipt of such proof of insurance. The Contract Administrator may withhold payments of monies due to the Contractor until the Contractor has provided the Contract Administrator with original valid Certificates of Insurance as required by the provisions of the Contract Documents.

GC 6.03.02 Commercial General Liability Insurance

- .01 Commercial General Liability Insurance shall be in the name of the Contractor, with the Owner and the Contract Administrator named as additional insureds, with limits of not less than five million dollars inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof. The insurance shall be provided in a form acceptable to the Owner.
- .02 Approval of this insurance shall be conditional upon the Contractor obtaining the services of an insurer licensed to underwrite insurance in the Province of Ontario and obtaining the insurer's certificate of equivalency to the required insurance.
- .03 The Contractor shall submit annually to the Owner, proof of continuation of the completed operations coverage and, if the Contractor fails to do so, the limitation period for claiming indemnity described in clause GC 6.02.01 c), shall not be binding on the Owner.
- .04 Should the Contractor decide not to employ Subcontractors for operations requiring the use of explosives for blasting, pile driving or caisson work, removal or weakening of support of property building or land, the Commercial General Liability Insurance shall include the appropriate endorsements.

- .05 The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, termination, or material change.
- .06 "Claims Made" insurance policies shall not be permitted.

GC 6.03.03 Automobile Liability Insurance

- .01 Automobile liability insurance in respect of licensed vehicles shall have limits of not less than five million dollars inclusive per occurrence for bodily injury, death and damage to property, in the following forms endorsed to provide the Owner with not less than 30 Days written notice in advance of any cancellation, termination, or material change.
 - a) standard non-owned automobile policy including standard contractual liability endorsement, and
 - b) standard owner's form automobile policy providing third party liability and accident benefits insurance and covering licensed vehicles owned or operated by the Contractor.

GC 6.03.04 Aircraft and Watercraft Liability Insurance

GC 6.03.04.01 Aircraft Liability Insurance

- .01 Aircraft liability insurance with respect to owned or non-owned aircraft used directly or indirectly in the performance of the Work, including use of additional premises, shall be subject to limits of not less than five million dollars inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof, and limits of not less than five million dollars for aircraft passenger hazard. Such insurance shall be in a form acceptable to the Owner. The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, change, or amendment restricting coverage.

6.03.04.02 Watercraft Liability Insurance

- .01 Watercraft liability insurance with respect to owned or non-owned watercraft used directly or indirectly in the performance of the Work, including use of additional premises, shall be subject to limits of not less than five million dollars inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof. Such insurance shall be in a form acceptable to the Owner. The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, change, or amendment restricting coverage.

GC 6.03.05 Property and Boiler Insurance

GC 6.03.05.01 Property Insurance

- .01 All risks property insurance shall be in the name of the Contractor, with the Owner and the Contract Administrator named as additional insureds, insuring not less than the sum of the amount of the Contract price and the full value, as may be stated in the Contract Documents, of Material that is specified to be provided by the Owner for incorporation into the Work.

GC 6.03.05.02 Boiler Insurance

- .01 Boiler insurance insuring the interests of the Contractor, the Owner and the Contract Administrator for not less than the replacement value of boilers and pressure vessels forming part of the Work, shall be in a form acceptable to the Owner.

GC 6.03.05.03 Use and Occupancy of the Work Prior to Completion

- .01 Should the Owner wish to use or occupy part or all of the Work prior to Substantial Performance, the Owner shall give 30 Days written notice to the Contractor of the intended purpose and extent of such use or occupancy. Prior to such use or occupancy, the Contractor shall notify the Owner in writing of the additional premium cost, if any, to maintain property and boiler insurance, which shall be at the Owner's expense. If because of such use or occupancy the Contractor is unable to provide coverage, the Owner upon written notice from the Contractor and prior to such use or occupancy shall provide, maintain, and pay for property and boiler insurance insuring the full value of the Work, including coverage for such use or occupancy, and shall provide the Contractor with proof of such insurance. The Contractor shall refund to the Owner the unearned premiums applicable to the Contractor's policies upon termination of coverage.
- .02 The policies shall provide that in the event of a loss or damage, payment shall be made to the Owner and the Contractor as their respective interests may appear. The Contractor shall act on behalf of both the Owner and the Contractor for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the Contractor shall proceed to restore the Work. Loss or damage shall not affect the rights and obligations of either party under the Contract, except that the Contractor shall be entitled to such reasonable extension of Contract Time relative to the extent of the loss or damage as the Contract Administrator may decide in consultation with the Contractor.

GC 6.03.05.04 Payment for Loss or Damage

- .01 The Contractor shall be entitled to receive from the Owner, in addition to the amount due under the Contract, the amount at which the Owner's interest in restoration of the Work has been appraised, such amount to be paid as the restoration of the Work proceeds, and in accordance with the requirements of section GC 8.0, Measurement and Payment. In addition, the Contractor shall be entitled to receive from the payments made by the insurers the amount of the Contractor's interest in the restoration of the Work.
- .02 The Contractor shall be responsible for deductible amounts under the policies, except where such amounts may be excluded from the Contractor's responsibility by the terms of this Contract.
- .03 In the event of a loss or damage to the Work arising from the action or omission of the Owner or others, the Owner shall pay the Contractor the cost of restoring the Work as the restoration of the Work proceeds and in accordance with the requirements of section GC 8.0, Measurement and Payment.

GC 6.03.06 Contractor's Equipment Insurance

- .01 All risks Contractor's Equipment insurance covering construction equipment used by the Contractor for the performance of the Work, including boiler insurance on temporary boilers and pressure vessels, shall be in a form acceptable to the Owner and shall not allow subrogation claims by the insurer against the Owner. The policies shall be endorsed to provide the Owner with not less than 30 Days written notice in advance of cancellation, change, or amendment restricting coverage. Subject to satisfactory proof of financial capability by the Contractor for self-insurance of the Contractor's Equipment, the Owner agrees to waive the equipment insurance requirement, and for the purpose of this Contract, the Contractor shall be deemed to be insured. This policy shall be amended to provide permission for the Contractor to grant prior releases with respect to damage to the Contractor's Equipment.

GC 6.03.07 Insurance Requirements and Duration

- .01 Each insurance policy as noted in the Contract Documents shall be in effect from the date of commencement of the Work until 10 Days after the date of Final Acceptance of the Work, as set out in the Final Acceptance Certificate.
- .02 The Contractor shall provide the Owner, on a form acceptable to the Owner, proof of insurance prior to commencement of the Work and signed by the underwriter or the broker.
- .03 The Contractor shall, on request, promptly provide the Owner with a certified true copy of each insurance policy exclusive of information pertaining to premium or premium bases used by the insurer to determine the cost of the insurance. The certified true copy shall include the signature of an officer of the insurer.
- .04 Where a policy is renewed, the Contractor shall provide the Owner, on a form acceptable to the Owner, renewed proof of insurance immediately following completion of renewal.
- .05 Unless specified otherwise, the Contractor shall be responsible for the payment of deductible amounts under the policies.
- .06 If the Contractor fails to provide or maintain insurance as required in subsection GC 6.03, Contractor's Insurance, or elsewhere in the Contract Documents, then the Owner shall have the right to provide and maintain such insurance and give evidence thereof to the Contractor. The Owner's cost thereof shall be payable by the Contractor to the Owner on demand.
- .07 If the Contractor fails to pay the cost of the insurance placed by the Owner within 30 Days of the date on which the Owner made a formal demand for reimbursement of such costs, the Owner may deduct the costs thereof from monies which are due or may become due to the Contractor.

GC 6.04 Bonding

- .01 The Contractor shall provide the Owner with the surety bonds in the amount required by the Contract Documents.
- .02 Such bonds shall be issued by a duly licensed surety company authorized to transact a business of suretyship in the Province of Ontario and shall be to the satisfaction of the Owner. The bonds shall be maintained in good standing until the Final Acceptance.

GC 6.05 Workplace Safety and Insurance Board

- .01 The Contractor shall provide the Contract Administrator with a copy of a Certificate of Clearance indicating the Contractor's good standing with the Workplace Safety and Insurance Board, as follows:
 - a) Immediately prior to the Contract Administrator authorizing the Contractor to commence Work.
 - b) Prior to issue of the Certificate of Substantial Performance.
 - c) Prior to expiration of the Warranty Period.
 - d) At any other time when requested by the Contract Administrator.

SECTION GC 7.0 - CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC 7.01 General

GC 7.01.01 Site Visit

- .01 The Contractor warrants that the site of the Work has been visited during the preparation of the Tender and the character of the Work and all local conditions that may affect the performance of the Work are known.

GC 7.01.02 Commencement of Work

- .01 The Contractor shall not commence the Work nor deliver anything to the Working Area until the Contractor has received a written order to commence the work from the Contract Administrator.

GC 7.01.03 Control and Responsibility

- .01 The Contractor shall have complete control of the Work and shall effectively direct and supervise the Work so as to ensure conformity with the Contract Documents. The Contractor shall be responsible for construction means, methods, techniques, sequences, and procedures and for coordinating the various parts of the Work.
- .02 The Contractor shall provide adequate labour, Equipment, and Material to ensure the completion of the Contract in accordance with the Contract Documents. The Work shall be performed as vigorously and as continuously as weather conditions or other interferences may permit.
- .03 The Contractor shall have the sole responsibility for the design, erection, operation, maintenance, and removal of temporary structures and other temporary facilities and the design and execution of construction methods required in their use.
- .04 Notwithstanding clause GC 7.01.03, where the Contract Documents include designs for temporary structures and other temporary facilities or specify a method of construction in whole or part, such facilities and methods shall be considered to be part of the design of the Work, and the Contractor shall not be held responsible for that part of the design or the specified method of construction. The Contractor shall, however, be responsible for the execution of such design or specified method of construction in the same manner that the Contractor is responsible for the execution of the Work.
- .05 The Contractor shall comply with and conform to all statutes, laws, by-laws, regulations, requirements, ordinances, notices, rulings, orders, directives and policies of the municipal, provincial and federal governments and any other lawful authority and all court orders, judgments and declarations of a court of competent jurisdiction (collectively referred to as the "Laws"), applicable to the Work to be provided by, and the undertakings and obligations of, the Contractor under this Contract.

GC 7.01.04 Compliance with the Occupational Health and Safety Act

- .01 The Contractor shall execute the terms of the Contract in strict compliance with the requirements of the Occupational Health and Safety Act, R.S.O. 1990, c.O.1, as amended, (the "Act") and Ontario Regulation 213/91, as amended, (that regulates Construction Projects) and any other regulations as amended under the Act (the "Regulations") that may affect the performance of the Work, as the "Constructor" or "employer," as defined by the Act, as the case may be. The Contractor shall ensure that:
- a) worker safety is given first priority in planning, pricing, and performing the Work;

- b) its officers and supervisory employees have a working knowledge of the duties of a "Constructor" and "employer" as defined by the Act and the provisions of the Regulations applicable to the Work, and a personal commitment to comply with them;
 - c) a copy of the most current version of the Act and the Regulations are available at the Contractor's office within the Working Area, or, in the absence of an office, in the possession of the supervisor responsible for the performance of the Work;
 - d) workers employed to carry out the Work possess the knowledge, skills, and protective devices required by law or recommended for use by a recognized industry association to allow them to work in safety;
 - e) its supervisory employees are "Competent Persons" as defined in the OHSA, and carry out their duties in a diligent and responsible manner with due consideration for the health and safety of the workers;
 - f) all Subcontractors and their workers are properly protected from injury while they are at the Working Area; and
 - g) following execution of the Contract and prior to the issuance of the order to commence by the Owner, upon request the Contractor submits to the Contract Administrator a copy of the Notice of Project issued to the Ministry of Labour.
- .02 The Contractor, when requested, shall provide the Owner with a copy of its health and safety policy and program at the pre-start meeting and shall respond promptly to requests from the Owner for confirmation that its methods and procedures for carrying out the Work comply with the Act and Regulations. The Contractor shall cooperate with representatives of the Owner and the inspectors appointed to enforce the Act and the Regulations in any investigations of worker health and safety in the performance of the Work. The Contractor shall indemnify and save the Owner harmless from any additional expense that the Owner may incur to have the Work performed as a result of the Contractor's failure to comply with the requirements of the Act and the Regulations.
- .03 Prior to commencement of the Work, the Contractor shall provide to the Contract Administrator a list of those products controlled under the Workplace Hazardous Materials Information System or "WHMIS", which the Contractor expects to use on the Contract. Related Safety Data Sheets shall accompany the submission. All containers used in the application of products controlled under "WHMIS" shall be labelled. The Contractor shall notify the Contract Administrator in writing of changes in the products to be used and provide relevant Safety Data Sheets.
- .04 During the course of the Work, the Contractor shall furnish forthwith to the Contract Administrator a copy of all correspondence, reports, orders or charges respecting occupational health and safety, including under the Act, Technical Standards and Safety Act, 2000, S.O. 2000, c.16 as amended, and the Criminal Code, R.S.C., 1985, c. C-46 as amended, which are received by, or which come to the notice of, the Contractor that apply or are relevant to any of the Work or activities conducted under the terms of the Contract.
- .05 Nothing in this Contract shall be construed as requiring the Owner to monitor or approve the workplace health and safety practices of the Contractor.

GC 7.01.05 Contractor's Representatives

- .01 The Contractor shall have an authorized representative on the site while any Work is being performed, to supervise the Work and act for or on the Contractor's behalf. Prior to commencement of construction, the Contractor shall notify the Contract Administrator of the names, addresses, positions, and cell phone, and telephone numbers of the Contractor's representatives who can be contacted at any time to deal with matters relating to the Contract, and update as necessary.

- .02 The Contractor shall designate a person to be responsible for traffic control and work zone safety. The designated person shall be a competent worker who is qualified because of knowledge, training, and experience to perform the duties; is familiar with Book 7 of the Ontario Traffic Manual; and has knowledge of all potential or actual danger to workers and motorists. Prior to the commencement of construction, the Contractor shall notify the Contract Administrator of the name; address; position; cell phone, and telephone numbers of the designated person, and update as necessary. The designated person may have other responsibilities, including other construction sites, and need not be present in the Working Area at all times.

GC 7.01.06 Assistance to the Contract Administrator

- .01 The Contractor shall, at no additional cost to the Owner, furnish all reasonable aid, facilities, and assistance required by the Contract Administrator for the proper inspection and examination of the Work or the taking of measurements for the purpose of payment.

GC 7.01.07 Schedule

- .01 The Contractor shall prepare and update, as required, a construction schedule of operations, indicating the proposed methods of construction and sequence of Work and the time the Contractor proposes to complete the various items of Work within the time specified in the Contract Documents. The schedule shall be submitted to the Contract Administrator within 14 Days from the Contract award. If the Contractor's schedule is materially affected by changes in the work, the Contractor shall submit an updated construction schedule, if requested by the Contract Administrator, within 7 Days of the request. This updated schedule shall show how the Contractor proposes to perform the balance of the Work, so as to complete the Work within the time specified in the Contract Documents.
- .02 For Contracts with a specified number of Working Days, the construction time shown on the initial schedule shall not exceed the specified number of Working Days. The activities on the critical path shall assist the Contract Administrator in determining the Controlling Operation for the purpose of the charging of Working Days. The construction schedule shall include all non-working periods and appropriate allowances for Inclement Weather.
- .03 For Contracts which specify a Contract Time, the construction time shown on the initial construction schedule shall not extend beyond the specified Contract Time. The construction schedule shall include all non-working periods and appropriate allowances for Inclement Weather.

GC 7.01.08 Errors and Inconsistencies Relating to the Contract

- .01 Where the Contractor finds any error, inconsistency, or omission relating to the Contract, the Contractor shall promptly report it to the Contract Administrator and shall not proceed with the activity affected until receiving direction from the Contract Administrator.
- .02 The Contractor shall promptly notify the Contract Administrator in writing if the subsurface conditions observed in the Working Area differ materially from those indicated in the Contract Documents.

GC 7.01.09 Utilities

- .01 The Contractor shall arrange with the appropriate Utility authorities for the stake out of all underground Utilities and service connections that may be affected by the Work. The Contractor shall observe the location of the stake outs prior to commencing the Work and in the event that there is a discrepancy between the location of the stake outs and the locations shown on the Contract Documents, that may affect the Work, the Contractor shall immediately notify the Contract Administrator and the affected Utility companies, in order to resolve the discrepancy. The Contractor shall be responsible for any damage done to the underground Utilities and service connections by

the Contractor's forces during construction if the stake out locations are within the tolerances given in clause GC 2.01.01 a).

- .02 In the case of damage to or interference with any Utilities, pole lines, pipe lines, conduits, farm tiles, or other public or privately owned works or property, the Contractor shall immediately notify the Owner, Contract Administrator, and the owner of the works of the location and details of such damage or interference.

GC 7.02 Monuments and Layout

- .01 Prior to commencement of construction, the Contract Administrator and the Contractor shall locate on site those Monuments that delineate the Working Area and may be used to lay out the Work, all as shown on the Contract Drawings. Property Monuments shall be inventoried in the report format required by the Owner.
- .02 These Monuments shall be protected by highly visible T-bars or 1.0 metre tall stakes with survey ribbon set within 0.3 metres of the Monument.
- .03 The Contractor shall be responsible for the preservation of all Property Monuments while the Work is in progress, except those Property Monuments that must be removed to facilitate the Work as identified and agreed by the Contractor and Contract Administrator. Monuments removed to facilitate the Work shall be replaced at the Owner's expense, and all others shall be replaced at the Contractor's expense.
- .04 All Monuments disturbed, damaged, or removed by the Contractor's operations shall be documented in the inventory report and replaced under the supervision of an Ontario Land Surveyor.
- .05 The Monument inventory report referred to in clauses GC 7.02.01 and GC 7.02.04 shall include as a minimum:
- Contract number, Contract name, Contract Administrator's name;
 - Project/site construction limits;
 - Rough location, type, identification number, and condition of each Monument before and after construction;
 - The solutions for protection of the Monuments that may be impacted by construction;
 - Reference ties;
 - A summary of those Monuments affected by the Work and how they were reset or replaced, and by what type of Monument.
- .06 At no extra cost to the Owner, the Contractor shall provide the Contract Administrator with such materials and devices as may be necessary to lay out the baseline and benchmarks, and as may be necessary for the inspection of the Work.
- .07 The Contractor shall provide qualified personnel to lay out and establish all lines and grades necessary for construction. The Contractor shall notify the Contract Administrator of any layout work carried out, so that the same may be checked by the Contract Administrator.
- .08 The Contractor shall install and maintain substantial alignment markers and secondary benchmarks as may be required for the proper execution of the Work. The Contractor shall supply one copy of all alignment and grade sheets to the Contract Administrator.
- .09 The Contractor shall assume full responsibility for alignment, elevations, and dimensions of each and all parts of the Work, regardless of whether the Contractor's layout work has been checked by the Contract Administrator.

- .10 All stakes, marks, and reference points shall be carefully preserved by the Contractor. In the case of their destruction or removal, for any reason, before the end of the Contract Time such stakes, marks, and reference points shall be replaced, unless otherwise mutually agreed between the Contractor and the Contract Administrator, at the Contractor's expense.
- .11 Benchmarks and survey monuments identified in the Contract Documents shall be protected by the Contractor. In the case of their destruction or removal, such benchmarks and survey monuments shall be replaced by the Owner at the Contractor's expense.

GC 7.03 Working Area

- .01 The Contractor shall maintain the Working Area in a tidy condition and free from the accumulation of debris and prevent dust nuisance, mud, and ponding water, other than that caused by the Owner or others.
- .02 The Contractor's sheds, site offices, toilets, other temporary structures, and storage areas for Material and Equipment shall be grouped in a compact manner, maintained in a neat and orderly condition at all times and removed upon completion of the Work.
- .03 The Contractor shall confine the construction operations to the Working Area. Should the Contractor require additional space, the Contractor shall obtain such space at no additional cost to the Owner.
- .04 The Contractor shall not enter upon or occupy any private property for any purpose, unless the Contractor has received prior written permission from the property owner.
- .05 Upon completion of the Contract, the Working Area used by the Contractor shall be restored to its original condition or better unless otherwise specified in the Contract Documents including the removal of all excavated and stockpiled materials at the Contractor's expense.

GC 7.04 Damage by Vehicles or Other Equipment

- .01 If at any time, in the opinion of the Contract Administrator, damage is being done or is likely to be done to any Roadway or any improvement thereon, outside the Working Area, by the Contractor's vehicles or other Equipment, whether licensed or unlicensed Equipment, the Contractor shall, on the direction of the Contract Administrator, and at no extra cost to the Owner, make changes or substitutions for such vehicles or Equipment, and shall alter loadings, or in some other manner, remove the cause of such damage to the satisfaction of the Contract Administrator.

GC 7.05 Excess Loading of Motor Vehicles

- .01 Where a vehicle is hauling Material for use on the Work, in whole or in part; upon a Highway; and where motor vehicle registration is required for such vehicle, the Contractor shall not cause or permit such vehicle to be loaded beyond the legal limit specified in the Highway Traffic Act, R.S.O. 1990, c.H.8, as amended, whether such vehicle is registered in the name of the Contractor or otherwise, except where there are designated areas within the Working Area where overloading is permitted. The Contractor shall bear the onus of weighing disputed loads.

GC 7.06 Maintaining Roads and Detours

- .01 Unless otherwise specified in the Contract Documents, if an existing Roadway is affected by construction, it shall be kept open to both vehicular and pedestrian traffic.
- .02 Subject to the approval of the Contract Administrator, the Contractor shall, at no additional cost to the Owner, be responsible for providing and maintaining for the duration of the Work an alternative route for both pedestrian and vehicular traffic through the Working Area in accordance with the OTM,

whether along the existing Highway under construction or on a detour road beside or adjacent to the Highway under construction.

- .03 Subject to the approval of the Contract Administrator, the Contractor may block traffic for short periods of time to facilitate construction of the Work in accordance with the OTM. Any temporary lane closures shall be kept to a minimum.
- .04 The Contractor shall not be required to maintain a road through the Working Area until such time as the Contractor has commenced operations or during seasonal shut down or on any part of the Contract that has been accepted in accordance with these General Conditions. The Contractor shall not be required to apply de-icing chemicals or abrasives or carry out snowplowing.
- .05 Where only localized and separated sections of the Highway are affected by the Contractor's operations, the Contractor shall not be required to maintain intervening sections of the Highway until such times as these sections are located within the limits of the Highway affected by the Contractor's general operations under the Contract.
- .06 Where the Contract Documents provide for or the Contract Administrator requires detours at specific locations, payment for the construction of the detours and, if required, for the subsequent removal of the detours, shall be made at the Contract prices appropriate to such Work.
- .07 Compensation for all labour, Equipment, and Materials to do this Work shall be at the Contract prices appropriate to the Work and, where there are no such prices, at negotiated prices. Notwithstanding the foregoing, the cost of blading required to maintain the surface of such roads and detours shall be deemed to be included in the prices bid for the various tender items and no additional payment shall be made.
- .08 Where Work under the Contract is discontinued for any extended period, including seasonal shutdown, the Contractor shall, when directed by the Contract Administrator, open and place the Roadway and detours in a passable, safe, and satisfactory condition for public travel.
- .09 Where the Contractor constructs a detour that is not specifically provided for in the Contract Documents or required by the Contract Administrator, the construction of the detour and, if required, the subsequent removal shall be performed at the Contractor's expense. The detour shall be constructed and maintained to structural and geometric standards approved by the Contract Administrator. Removal and site restoration shall be performed as directed by the Contract Administrator.
- .10 Where, with the prior written approval of the Contract Administrator, the Highway is closed and the traffic diverted entirely off the Highway to any other Highway, the Contractor shall, at no extra cost to the Owner, supply, erect, and maintain traffic control devices in accordance with the OTM.
- .11 Compliance with the foregoing provisions shall in no way relieve the Contractor of its obligations under subsection GC 6.01, Protection of Work, Persons, and Property, dealing with the Contractor's responsibility for damage claims, except for claims arising on sections of Highway within the Working Area that are being maintained by others.

GC 7.07 Access to Properties Adjoining the Work and Interruption of Utility Services

- .01 The Contractor shall provide at all times and at no extra cost to the Owner,
 - a) safe and adequate pedestrian and vehicular access; ~~and~~
 - b) continuity of Utility services; and

c) access for emergency response services;

to properties adjoining the Working Area.

- .02 The Contractor shall provide at all times and at no extra cost to the Owner access to fire hydrants, water and gas valves, and all other Utilities located in the Working Area.
- .03 Where any interruptions in the supply of Utility services are required and are authorized by the Contract Administrator, the Contractor shall give the affected property owners notice in accordance with subsection GC 7.11, Notices by the Contractor, and shall arrange such interruptions so as to create a minimum of interference to those affected.

GC 7.08 Approvals and Permits

- .01 Except as specified in subsection GC 4.02, Approval and Permits, the Contractor shall obtain and pay for any permits, licences, and certificates, which at the date of tender closing, are required for the performance of the Work.
- .02 The Contractor shall arrange for all necessary inspections required by the approvals and permits specified in clause GC 7.08.01, Approvals and Permit.

GC 7.09 Suspension of Work

- .01 The Contractor shall, upon written notice from the Contract Administrator, discontinue or delay any or all of the Work and Work shall not be resumed until the Contract Administrator so directs in writing. Delays, in these circumstances, shall be administered according to subsection GC 3.07, Delays.

GC 7.10 Contractor's Right to Stop the Work or Terminate the Contract

- .01 If the Owner is adjudged bankrupt or makes a general assignment for the benefit of creditors because of insolvency or if a receiver is appointed because of insolvency, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the Owner or receiver or trustee in bankruptcy written notice, terminate the Contract.
- .02 If the Work is stopped or otherwise delayed for a period of 30 Days or more under an order of a court or other public authority and provided that such order was not issued as the result of an act or fault of the Contractor or of anyone directly employed or engaged by the Contractor, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the Owner written notice, terminate the Contract.
- .03 The Contractor may notify the Owner in writing, with a copy to the Contract Administrator, that the Owner is in default of contractual obligations if,
 - a) the Contract Administrator fails to issue certificates in accordance with the provisions of section GC 8.0, Measurement and Payment;
 - b) the Owner fails to pay the Contractor, within 30 Days of the due dates identified in clause GC 8.02.04, Certification and Payment, the amounts certified by the Contract Administrator or within 30 Days of an award by an arbitrator or court; or
 - c) the Owner fails to comply with the requirements of the Contract.
- .04 The Contractor's written notice to the Owner shall advise that if the default is not corrected in the 7 Days immediately following receipt of the written notice, the Contractor may, without prejudice to any other right or remedy the Contractor may have, stop the Work or terminate the Contract.

- .05 If the Contractor terminates the Contract under the conditions set out in subsection GC 7.10, Contractor's Right to Stop the Work or Terminate the Contract, the Contractor shall be entitled to be paid for all Work performed according to the Contract Documents and for any losses or damage as the Contractor may sustain as a result of the termination of the Contract.

GC 7.11 Notices by the Contractor

- .01 Before any Work is carried out that may affect the property or operations of any Ministry or agency of government or any person; company; partnership; or corporation, including a municipal corporation or any board or commission thereof, and in addition to such notices of the commencement of specified operations as are prescribed elsewhere in the Contract Documents, the Contractor shall give at least 48 hours advance written notice of the date of commencement of such Work to the person, company, partnership, corporation, board, or commission so affected.

GC 7.12 Environmental Incident Management under Legislation Protecting the Environment and Natural Resources

- .01 The Contractor shall be in strict compliance with the requirements of the following legislation, as amended, regarding environmental incidents under the control of the Contractor or that are a result of the Contractor's operations:
- a) Environmental Protection Act, R.S.O. 1990, c. E.19
 - b) Fisheries Act, R.S.C. 1985, c. F-14
 - c) Technical Standards and Safety Act, 2000, S.O. 2000, c. 16
 - d) Pesticides Act, R.S.O. 1990, c. P.11
 - e) Ontario Water Resources Act, R.S.O. 1990, c. O.40
 - f) Transportation of Dangerous Goods Act, 1992, S.C.1992, c. 34
- .02 The requirements of the legislation listed in clause GC 7.12.01 include but are not restricted to:
- a) Immediate containment of the material, pollutant, contaminant, deleterious substance, or dangerous good;
 - b) Immediate notification of the environmental incident to the proper authority; and
 - c) Clean up and restoration of the environment to preconditions.
- .03 The Contractor shall possess a plan demonstrating that environmental incidents shall be managed to satisfy the requirements of clauses GC 7.12.01 and GC 7.12.02.
- .04 The Contractor shall provide a copy of the environmental incident plan to the Contract Administrator when required and shall inform the Contract Administrator immediately of:
- a) An environmental incident when it occurs; and
 - b) Any actions taken or intended to be taken by the Contractor regarding the environmental incident.
- .05 The Contractor shall indemnify and save the Owner harmless from any additional expense that the Owner may incur to have the Work performed as a result of the Contractor's failure to comply with

the requirements of the legislation listed in clause GC 7.12.01.

GC 7.13 Obstructions

- .01 Except as otherwise noted in these General Conditions, the Contractor assumes all the risks and responsibilities arising out of any obstruction encountered in the performance of the Work and any traffic conditions, including traffic conditions on any Highway or road giving access to the Working Area caused by such obstructions, and the Contractor shall not make any claim against the Owner for any loss, damage, or expense occasioned thereby.
- .02 Where the obstruction is an underground Utility or other man-made object, the Contractor shall not be required to assume the risks and responsibilities arising out of such obstruction, unless the location of the obstruction is shown on the Plans or described in the Contract Documents and the location so shown is within the tolerance specified in clause GC 2.01.01 a), or unless the presence and location of the obstruction has otherwise been made known to the Contractor or could have been determined by the visual site investigation made by the Contractor in accordance with these General Conditions.
- .03 During the course of the Contract, it is the Contractor's responsibility to consult with Utility companies or other appropriate authorities for further information in regard to the exact location of these Utilities, to exercise the necessary care in construction operations, and to take such other precautions as are necessary to safeguard the Utilities from damage.

GC 7.14 Limitations of Operations

- .01 Except for such Work as may be required by the Contract Administrator to maintain the Work in a safe and satisfactory condition, the Contractor shall not carry out operations under the Contract on Saturdays, Sundays, and any holidays recognized by the Owner without permission in writing from the Contract Administrator.
- .02 The Contractor shall cooperate and coordinate the Work with other Contractors, Utility companies, and the Owner and they shall be allowed access to their Work or plant at all reasonable times.

GC 7.15 Cleaning Up Before Acceptance

- .01 Upon attaining Substantial Performance of the Work, the Contractor shall remove surplus materials, tools, and Equipment not required for the performance of the remaining Work. The Contractor shall also remove all temporary works and debris other than that caused by the Owner or others and leave the Work and Working Area clean and suitable for occupancy by the Owner, unless otherwise specified.
- .02 The Work shall not be deemed to have reached Completion until the Contractor has removed surplus materials, tools, and Equipment. The Contractor shall also have removed debris, other than that caused by the Owner, or others.

GC 7.16 Warranty

- .01 Unless otherwise specified in the Contract Documents for certain Materials or components of the Work, the Contractor shall be responsible for the proper performance of the Work only to the extent that the design and standards permit such performance.
- .02 Subject to the previous paragraph the Contractor shall correct promptly, at no additional cost to the Owner, defects or deficiencies in the Work that appear,
 - a) prior to and during the period of 24 months from the date of Substantial Performance of the Work, as set out in the Certificate of Substantial Performance of the Work,

- b) where there is no Certificate of Substantial Performance, 24 months from the date of Completion of the Work as set out in the Completion Certificate, or
- c) such longer periods as may be specified in the Contract Documents for certain Materials or some of the Work.

The Contract Administrator shall promptly give the Contractor written notice of observed defects or deficiencies.

- .03 The Contractor shall correct or pay for damage resulting from corrections made under the requirements of clause GC 7.16.02.

GC 7.17 Contractor's Workers

- .01 The Contractor shall only employ orderly, competent, and skillful workers to do the Work and whenever the Contract Administrator shall inform the Contractor in writing that any worker or workers involved in the Work are, in the opinion of the Contract Administrator, incompetent, or disorderly such worker or workers shall be removed from the Work and shall not be employed on the Work again without the consent in writing of the Contract Administrator.

GC 7.18 Drainage

- .01 During construction and until the Work is completed, the Contractor shall make all reasonable efforts to keep all portions of the Work properly and efficiently drained, to at least the same degree as that of the existing drainage conditions.

SECTION GC 8.0 - MEASUREMENT AND PAYMENT

GC 8.01 Measurement

GC 8.01.01 Quantities

- .01 The Contract Administrator shall make an Estimate in writing once a month, unless otherwise specified in the Contract Documents, of the quantity of Work performed. The first Estimate shall be the quantity of Work performed since the Contractor commenced the Contract, and every subsequent Estimate, except the final one, shall be of the quantity of Work performed since the preceding Estimate was made. The Contract Administrator shall provide the copy of each Estimate to the Contractor within 10 Days of the Cut-Off Date.
- .02 Quantities for progress payments shall be construed and held to approximate. The final quantities for the issuance of the Completion Payment Certificate shall be based on the measurement of Work completed.
- .03 Measurement of the quantities of the Work performed may be either by Actual Measurement or by Plan Quantity principles as indicated in the Contract. Adjustments to Plan Quantity measurements shall normally be made using Plan Quantity principles but may, where appropriate, be made using Actual Measurements. Those items identified on the Tender by the notation (P) in the unit column shall be paid according to the Plan Quantity. Items where the notation (P) does not occur shall be paid according to Actual Measurement or lump sum.

GC 8.01.02 Variations in Tender Quantities

- .01 Where it appears that the quantity of Work to be done or Material to be supplied or both by the Contractor under a unit price tender item may exceed or be less than the tender quantity, the Contractor shall proceed to do the Work or supply the Material or both required to complete the tender item and payment shall be made for the actual amount of Work done or Material supplied or both at the unit prices stated in the Tender except as provided below:
 - a) In the case of a Major Item where the quantity of Work performed or Material supplied or both by the Contractor exceeds the tender quantity by more than 15%, either party to the Contract may make a written request to the other party to negotiate a revised unit price for that portion of the Work performed or Material supplied or both which exceeds 115% of the tender quantity. The negotiation shall be carried out as soon as reasonably possible. Any revision of the unit price shall be based on the actual cost of doing the Work or supplying the Material or both under the tender item plus a reasonable allowance for profit and applicable overhead. Alternatively, where both parties agree, an allowance equal to 10% of the unit price on the amount of the underrun in excess of 15% of the tender quantity shall be paid.
 - b) In the case of a Major Item where the quantity of Work performed or Material supplied or both by the Contractor is less than 85% of the tender quantity, the Contractor may make a written request to negotiate for the portion of the actual overheads and fixed costs applicable to the amount of the underrun in excess of 15% of the tender quantity. For purposes of the negotiation, the overheads and fixed costs applicable to the item are deemed to have been prorated uniformly over 100% of the tender quantity for the item. Overhead costs shall be confirmed by a statement certified by the Contractor's senior financial officer or auditor and may be audited by the Owner. Alternatively, where both parties agree, an allowance equal to 10% of the unit price on the amount of the underrun in excess of 15% of the tender quantity shall be paid.

Written requests for compensation must be received no later than 60 Days after the issuance of the Completion Payment Certificate.

GC 8.02 Payment

GC 8.02.01 Non-Resident Contractor

- .01 If the Contractor is not a registered entity in Ontario, the Contractor shall obtain all necessary approvals, consents, permits, licences, certificates, registrations, and other authorizations prior to execution of the Contract.
- .02 The Contractor shall ensure that all Subcontractors the Contractor proposes to use for carrying out any of the Work required by the Contract and who are not a registered entity in Ontario have obtained all necessary approvals, consents, permits, certificates, registrations, and other authorizations prior to execution of the subcontract.

GC 8.02.02 Price for Work

- .01 Prices for the Work shall be full compensation for all labour, Equipment and Material required in its performance. The term "all labour, Equipment, and Material" shall include Hand Tools, supplies, and other incidentals.
- .02 Payment, for Work which is identified in the Contract Documents but not specifically detailed as part of any one item shall be deemed to be included in the items with which it is associated.

GC 8.02.03 Advance Payments for Material

- .01 The Owner shall make advance payments for Material intended for incorporation in the Work upon the written request of the Contractor and according to the following terms and conditions:
 - a) The Contractor shall deliver the Material to a site approved by the Contract Administrator and the Contractor shall, in advance of receipt of the shipment of the Material, arrange for adequate and proper storage facilities.
 - b) The value of aggregates, processed and stockpiled, shall be assessed by the following procedure:
 - i. Sources Other Than Commercial
 - (1) Granular A, B, BI, BII, BIII, M, and O shall be assessed at the rate of 60% of the Contract price.
 - (2) Coarse and fine aggregates for hot mix asphaltic concrete, surface treatment and Portland cement concrete shall be assessed at the rate of 25% of the Contract price for each aggregate stockpiled.
 - ii. Commercial Sources
 - Payment for separated coarse and fine aggregates shall be considered at the above rate when such Materials are stockpiled at a commercial source where further processing is to be carried out before incorporating such Materials into a final product. Advance payments for other Materials located at a commercial source shall not be made.
 - c) Payment for all other Materials, unless otherwise specified elsewhere in the Contract Documents, shall be based on the invoice price, and the Contractor shall submit proof of cost to the Contract Administrator before payment can be made by the Owner.
 - d) The payment for all Materials shall be prorated against the appropriate tender item by paying for sufficient units of the item to cover the value of the Material. Such payment shall not exceed 80% of the Contract price for the item.

- e) All Materials for which the Contractor wishes to receive advance payment shall be placed in the designated storage location immediately upon receipt of the Material and shall thenceforth be held by the Contractor in trust for the Owner as collateral security for any monies advanced by the Owner and for the due completion of the Work. The Contractor shall not exercise any act of ownership inconsistent with such security, or remove any Material from the storage locations, except for inclusion in the Work, without the consent, in writing, of the Contract Administrator.
 - f) Such materials shall remain at the risk of the Contractor who shall be responsible for any loss, damage, theft, improper use, or destruction of the Material however caused.
- .02 Where the Owner makes advance payments subject to the conditions listed in clause GC 8.02.03.01, such payment shall not constitute acceptance of the Material by the Owner. Acceptance shall only be determined when the Material meets the requirements of the appropriate specification.

GC 8.02.04 Certification and Payment

GC 8.02.04.01 Progress Payment Certificate

- .01 The value of the Work performed and Material supplied shall be calculated by the Contract Administrator in accordance with clause GC 8.01.01, Quantities and as specified in the Contract Documents. Progress Payments shall be made on a monthly basis unless specified otherwise in the Contract Documents.
- .02 The progress payment certificate shall show,
- a) the quantities of Work performed;
 - b) the value of Work performed;
 - c) any advanced payment for Material;
 - d) the amount of statutory holdback, liens, Owner's set-off;
 - e) the amount of any applicable taxes; and
 - f) the amount due to the Contractor.
- .03 One copy of the progress payment certificate shall be sent to the Contractor.
- .04 Payment shall be made within 30 Days of the Cut-Off Date.
- .05 The Owner shall retain from funds owing under the Contract the statutory holdbacks required under the *Construction Act*.

GC 8.02.04.02 Certification of Subcontract Completion

- .01 Before the Work has reached the stage of Substantial Performance, the Contractor may notify the Contract Administrator, in writing that a subcontract is completed satisfactorily and ask that the Contract Administrator certify the completion of such subcontract.
- .02 The Contract Administrator shall issue a Certificate of Subcontract Completion, if the subcontract has been completed in a form satisfactory to the Contract Administrator, and all required inspection and testing of the works covered by the subcontract have been carried out and the results are satisfactory to the Contract Administrator.

- .03 The Contract Administrator shall set out in the Certificate of Subcontract Completion the date on which the subcontract was completed and, within 7 Days of the date the subcontract is certified complete, the Contract Administrator shall give a copy of the certificate to the Contractor and to the Subcontractor concerned.

GC 8.02.04.03 Subcontract Statutory Holdback Release Certificate and Payment

- .01 Following receipt of the Certificate of Subcontract Completion, the Owner shall release and pay the Contractor the statutory holdback retained in respect of the subcontract. Such release shall be made 61 Days after the date the subcontract was certified complete and providing the Contractor submits the following to the Contract Administrator:
- a) a document satisfactory to the Contract Administrator that shall release the Owner from all further claims relating to the subcontract, qualified by stated exceptions such as holdback monies;
 - b) evidence satisfactory to the Contract Administrator that the Subcontractor has discharged all liabilities incurred in carrying out the subcontract;
 - c) a satisfactory clearance certificate or letter from the Workplace Safety and Insurance Board relating to the subcontract; and
 - d) a copy of the contract between the Contractor and the Subcontractor and a satisfactory statement showing the total amount due the Subcontractor from the Contractor.
- .02 Clause GC 8.02.04.03.01 d), shall only apply to Lump Sum Items and then only when the Contract Administrator specifically requests it.
- .03 Upon receipt of the statutory holdback, the Contractor shall forthwith give the Subcontractor the payment due under the subcontract.
- .04 Release of statutory holdback by the Owner in respect of a subcontract shall not relieve the Contractor, or the Contractor's Surety, of any of their responsibilities.

GC 8.02.04.04 Certification of Substantial Performance

- .01 Upon application by the Contractor and when the Contract Administrator has verified that the Contract has been substantially performed, the Contract Administrator shall issue a Certificate of Substantial Performance.
- .02 Upon verifying that the Contract has been substantially performed, the Contract Administrator shall issue a certificate of Substantial Performance and shall set out in the Certificate of Substantial Performance the date on which the Contract was substantially performed and, within 7 Days after signing the said certificate, the Contract Administrator shall provide a copy to the Contractor.
- .03 Upon receipt of a copy of the Certificate of Substantial Performance, the Contractor shall forthwith, as required by Section 32(1) Paragraph 5 of the Construction Act, R.S.O. 1990, c.C.30, as amended, publish a copy of the certificate in the manner set out in the regulations.
- .04 Where the Contractor fails to publish a copy of the Certificate of Substantial Performance as required above within 7 Days after receiving a copy of the certificate signed by the Contract Administrator, the Owner may publish a copy of the certificate at the Contractor's expense.
- .05 Except as otherwise provided for in Section 31 of the Construction Act, the 60 Day lien period prior to the release of holdback as referred to in clause GC 8.02.04.05, Substantial Performance Payment

and Statutory Holdback Release Payment Certificates, shall commence from the date of publication of the Certificate of Substantial Performance as provided for above.

GC 8.02.04.05 Substantial Performance Payment and Substantial Performance Statutory Holdback Release Payment Certificates

- .01 When the Contract Administrator issues the Certificate of Substantial Performance, the Contract Administrator shall also issue the Substantial Performance Payment Certificate and the Substantial Performance Statutory Holdback Release Payment Certificate or where appropriate, a combined payment certificate.
- .02 The Substantial Performance Payment Certificate shall show,
 - a) the value of Work performed to the date of Substantial Performance;
 - b) the value of outstanding or incomplete Work;
 - c) the amount of the statutory holdback, allowing for any previous releases of statutory holdback to the Contractor in respect of completed subcontracts and deliveries of pre-selected Equipment;
 - d) the amount of maintenance security required; and
 - e) the amount due the Contractor.
- .03 Payment of the amount certified shall be made within 30 Days of the date of issuance of the payment certificate.
- .04 The Substantial Performance Statutory Holdback Release Payment Certificate shall be a payment certificate releasing to the Contractor the statutory holdback due in respect of Work performed up to the date of Substantial Performance. Payment of such statutory holdback shall be due 61 Days after the date of publication of the Certificate of Substantial Performance but subject to the provisions of the Construction Act.

GC 8.02.04.06 Certification of Completion

- .01 Upon application by the Contractor and when the Contract Administrator has verified that the Contract has reached Completion, the Contract Administrator shall issue a Completion Certificate.
- .02 The Contract Administrator shall set out in the Completion Certificate the date on which the Work was completed and, within 7 Days of signing the said certificate, the Contract Administrator shall provide a copy to the Contractor.

GC 8.02.04.07 Completion Payment and Completion Statutory Holdback Release Payment Certificates

- .01 When the Contract Administrator issues the Completion Certificate, the Contract Administrator shall also issue the Completion Payment Certificate and the Completion Statutory Holdback Release Payment Certificate or where appropriate, a combined payment certificate.
- .02 The Completion Payment Certificate shall show,
 - a) measurement and value of Work at Completion;

- b) the amount of the further statutory holdback based on the value of further Work completed over and above the value of Work completed shown in the Substantial Performance Payment Certificate referred to above; and
- c) the amount due the Contractor.

.03 The Completion Statutory Holdback Release Payment Certificate shall be a payment certificate releasing to the Contractor the further statutory holdback. Payment of such statutory holdback shall be due 61 Days after the date of Completion of the Work as established by the Completion Certificate but subject to the provisions of the Construction Act.

GC 8.02.04.08 Interest

.01 Interest due the Contractor is based on simple interest and is calculated using the applicable Rate of Interest.

GC 8.02.04.09 Interest for Late Payment

.01 Provided the Contractor has complied with the requirements of the Contract, including all documentation requirements, when payment by the Owner to the Contractor for Work performed, or for release of statutory holdback, is delayed by the Owner, then the Contractor shall be entitled to receive interest on the outstanding payment at the Rate of Interest, if payment is not received on the dates set out below:

- a) Progress Payment Certificates: 30 Days after the Cut-Off Date;
- b) Certificate of Subcontract Completion: 30 Days after the date certified as the date on which the subcontract was completed;
- c) Subcontract Statutory Holdback Release Payment Certificate: 91 Days after the date on which the subcontract was completed;
- d) Substantial Performance Payment Certificate: 30 Days after the date of issuance of the certificate;
- e) Substantial Performance Statutory Holdback Release Payment Certificate: 91 Days after publication of the Payment Certificate of Substantial Performance;
- f) Completion Payment Certificate: 30 Days after the date certified as the date on which the Contract reached Completion; and
- g) Completion Statutory Holdback Release Payment Certificate: 91 Days after the date certified as the date that the Work was completed.

.02 If the Contractor has not complied with the requirements of the Contract, including all documentation requirements, prior to expiration of the time periods described in clause GC 8.02.04.09.01, interest shall only begin to accrue when the Contractor has completed those requirements.

GC 8.02.04.10 Interest for Negotiations and Claims

.01 Except as hereinafter provided, where a notice of negotiation, notice of intent to claim and the subsequent claims are submitted in accordance with the time limits or procedure or both described by subsection GC 3.13, Claims, Negotiations, Mediation, the Owner shall pay the Contractor the Rate of Interest on the amount of the negotiated price for that part of the Work or on the amount of the settled claim. Such interest shall not commence until 30 Days after the satisfactory completion of that part of the Work.

- .02 Where the Contractor fails to give notice of a claim within the time limit prescribed by subsection GC 3.13, Claims, Negotiations, Mediation, interest shall not be paid.
- .03 Where a Contractor fails to comply with the 30 Day time limit and the procedures prescribed in clause GC 3.13.03.03 for submission of claims, interest shall not be paid for the delay period.

GC 8.02.04.11 Owner's Set-Off

- .01 Pursuant to the Construction Act, The Owner may retain from monies owing to the Contractor under this Contract an amount sufficient to cover any outstanding or disputed liabilities, including the cost to remedy deficiencies, the reduction in value of substandard portions of the Work, claims for damages by third parties that have not been determined in writing by the Contractor's insurer, undetermined claims by the Owner, and any assessment due the Workplace Safety and Insurance Board.
- .02 Under these circumstances the Owner will give the Contractor appropriate notice of such action.

GC 8.02.04.12 Delay in Payment

- .01 The Owner shall not be deemed to be in default of the Contract provided any delay in payment does not exceed 30 Days from the due dates as defined in clause GC 8.02.04.09.01.

GC 8.02.05 Payment on a Time and Material Basis

GC 8.02.05.01 Definitions

- .01 For the purpose of clause GC 8.02.05 the following definitions apply:

Cost of Labour means the amount of wages, salary, travel, travel time, food, lodging, or similar items and Payroll Burden paid or incurred directly by the Contractor to or in respect of labour and supervision actively and necessarily engaged on the Work based on the recorded time and hourly rates of pay for such labour and supervision but shall not include any payment or costs incurred for general supervision, administration, and management time spent on the entire Work or any wages, salary, or Payroll Burden for which the Contractor is compensated by any payment made by the Owner for Equipment.

Cost of Material means the cost of Material purchased or supplied from stock and valued at current market prices for the purpose of carrying out Extra Work by the Contractor or by others, when such arrangements have been made by the Contractor for completing the Work, as shown by itemized invoices.

Operated Rented Equipment means Rented Equipment for which an operator is provided by the supplier of the Equipment and for which the rent or lease includes the cost of the operator.

Payroll Burden means the payments in respect of workplace insurance, vacation pay, employment insurance, public liability and property damage insurance, sickness and accident insurance, pension fund, and such other welfare and benefit payments forming part of the Contractor's normal labour costs.

Rented Equipment means Equipment that is rented or leased for the special purpose of Work on a Time and Material Basis from a person, firm, or corporation that is not an associate of the lessee as the word "associate" is defined by the Securities Act, R.S.O. 1990, c.S.5, as amended, and is approved by the Contract Administrator.

Road Work means the preparation, construction, finishing, and construction maintenance of roads, streets, Highways, and parking lots and includes all work incidentals thereto other than Work on structures.

Sewer and Watermain Work means the preparation, construction, finishing, and construction maintenance of sewer systems and watermain systems, and includes all work incidental thereto other than Work on structures.

Standby Time means any period of time that is not considered Working Time and which together with the Working Time does not exceed 10 hours in any one Working Day and during which time a unit of Equipment cannot practically be used on other Work but must remain on the site in order to continue with its assigned task and during which time the unit is in fully operable condition.

Structure Work means the construction, reconstruction, repair, alteration, remodelling, renovation, or demolition of any bridge, building, tunnel, or retaining wall and includes the preparation for and the laying of the foundation of any bridge, building, tunnel, or retaining wall and the installation of Equipment and appurtenances incidental thereto.

The 127 Rate means the rate for a unit of Equipment as listed in OPSS.PROV 127, Schedule of Rental Rates for Construction Equipment, Including Model and Specification Reference, that is current at the time the work is carried out or for Equipment that is not so listed, the rate that has been calculated by the Owner, using the same principles as used in determining The 127 Rates.

Work on a Time and Material Basis means Changes in the Work, Extra Work, and Additional Work approved by the Contract Administrator for payment on a Time and Material basis. The Work on a Time and Material Basis shall be subject to all the terms, conditions, Standard Specifications and provisions of the Contract.

Working Time means each period of time during which a unit of Equipment is actively and of necessity engaged on a specific operation and the first 2 hours of each immediately following period during which the unit is not so engaged but during which the operation is otherwise proceeding and during which time the unit cannot practically be transferred to other Work but must remain on the site in order to continue with its assigned tasks and during which time the unit is in a fully operable condition.

GC 8.02.05.02 Daily Work Records

.01 Daily Work Records, prepared as the case may be by either the Contractor's representative or the Contract Administrator reporting the labour and Equipment employed and the Material used on each Time and Material project, should be reconciled and signed each Day by both the Contractor's representative and the Contract Administrator. If it is not possible to reconcile the Daily Work Records, then the Contractor shall submit the un-reconciled Daily Work Records with its claim, whereby the resolution of the dispute about the Daily Work Records shall not be resolved until there is a resolution of the claim.

GC 8.02.05.03 Payment for Work

.01 Payment as herein provided shall be full compensation for all labour, Equipment, and Material to do the Work on a Time and Material Basis except where there is agreement to the contrary prior to the commencement of the Work on a Time and Material Basis. The payment adjustments on a Time and Material basis shall apply to each individual Change Order authorized by the Contract Administrator.

GC 8.02.05.04 Payment for Labour

.01 The Owner shall pay the Contractor for labour employed on each Time and Material project at 135% of the Cost of Labour up to \$3,500, then at 120% of any portion of the Cost of Labour in excess of \$3,500.

- .02 The Owner shall make payment in respect of Payroll Burden for Work on a Time and Material Basis at the Contractor's actual cost of Payroll Burden.
- .03 At the Owner's discretion, an audit may be conducted in which case the actual Payroll Burden so determined shall be applied to all Time and Material work on the Contract.

GC 8.02.05.05 Payment for Material

- .01 The Owner shall pay the Contractor for Material used on each Time and Material project at 120% of the Cost of the Material up to \$3,500, then at 115% of any portion of the Cost of Material in excess of \$3,500.

GC 8.02.05.06 Payment for Equipment

GC 8.02.05.06.01 Working Time

- .01 The Owner shall pay the Contractor for the Working Time of all Equipment, other than Rented Equipment and Operated Rented Equipment, used on the Work on a Time and Material basis at The 127 Rates with a cost adjustment as follows:
 - a) Cost \$12,000 or less - no adjustment;
 - b) Cost greater than \$12,000 but not exceeding \$24,000 - payment \$12,000 plus 90% of the portion in excess of \$12,000; and
 - c) Cost greater than \$24,000 - \$22,800 plus 80% of the portion in excess of \$24,000.
- .02 The Owner shall pay the Contractor for the Working Time of Rented Equipment used on the Work on a Time and Material Basis at 110% of the invoice price approved by the Contract Administrator up to a maximum of 110% of The 127 Rate. This constraint shall be waived when the Contract Administrator approves the invoice price prior to the use of the Rented Equipment.
- .03 The Owner shall pay the Contractor for the Working Time of Operated Rented Equipment used on the Work on a Time and Material Basis at 110% of the Operated Rented Equipment invoice price approved by the Contract Administrator prior to the use of the Equipment on the Work on a Time and Material Basis.

GC 8.02.05.06.02 Standby Time

- .01 The Owner shall pay the Contractor for Standby Time of Equipment at 35% of The 127 Rate or 35% of the invoice price whichever is appropriate. The Owner shall pay reasonable costs for Rented Equipment where this is necessarily retained in the Working Area for extended periods agreed to by the Contract Administrator. This shall include Rented Equipment intended for use on other work, but has been idled due to the circumstances giving rise to the Work on a Time and Material Basis.
- .02 In addition, the Owner shall include the Cost of Labour of operators or associated labourers who cannot be otherwise employed during the Standby Time or during the period of idleness caused by the circumstances giving rise to the Work on a Time and Material Basis.
- .03 The Contract Administrator may require Rented Equipment idled by the circumstances giving rise to the Work on Time and Material Basis to be returned to the lessor until the Work requiring the Equipment can be resumed. The Owner shall pay such costs as a result from such return.
- .04 When Equipment is transported, solely for the purpose of the Work on a Time and Material Basis, to or from the Working Area on a Time and Material basis, payment shall be made by the Owner only in respect of the transporting units. When Equipment is moved under its own power it shall be

deemed to be working. The method of moving Equipment and the rates shall be subject to the approval of the Contract Administrator.

GC 8.02.05.07 Payment for Hand Tools

- .01 Notwithstanding any other provision of this Section, no payment shall be made to the Contractor for or in respect of Hand Tools or Equipment that are tools of the trade.

GC 8.02.05.08 Payment for Work By Subcontractors

- .01 Where the Contractor arranges for Work on a Time and Material Basis, or a part of it, to be performed by Subcontractors on a Time and Material basis and has received approval prior to the commencement of such Work, in accordance with the requirements of subsection GC 3.09, Subcontracting by the Contractor, the Owner shall pay the cost of Work on a Time and Material Basis by the Subcontractor calculated as if the Contractor had done the Work on a Time and Material Basis, plus a markup calculated on the following basis:

- a) 20% of the first \$3,500; plus
- b) 15% of the amount from \$3,500 to \$12,000; plus
- c) 5% of the amount in excess of \$12,000.

- .02 No further markup shall be applied regardless of the extent to which the work is assigned or sublet to others. If Work is assigned or sublet to an associate, as defined by the Securities Act, no markup whatsoever shall be applied.

GC 8.02.05.09 Submission of Invoices

- .01 At the start of the Work on a Time and Material Basis, the Contractor shall provide the applicable labour and Equipment rates not already submitted to the Contract Administrator during the course of such Work.
- .02 Separate summaries shall be completed by the Contractor. Each summary shall include the Change Directive or Change Order number and covering dates of the Work and shall itemize separately the labour, Materials, and Equipment. Invoices for Materials, Rented Equipment, and other charges incurred by the Contractor on the Work on a Time and Material Basis shall be included with each summary.
- .03 Each month the Contract Administrator shall include with the monthly progress payment certificate, the costs of the Work on a Time and Material Basis incurred during the preceding month all in accordance with the contract administrative procedures and the Contractor's invoice of the Work on a Time and Material Basis.
- .04 The final summary as per clause 8.02.05.09.02 shall be submitted by the Contractor within 60 Days after the completion of the Work on a Time and Material Basis.

GC 8.02.05.10 Payment Other Than on a Time and Material Basis

- .01 Clause GC 8.02.05 does not preclude the option of the Contract Administrator and the Contractor negotiating a Lump Sum Item or unit price payment for Change in the Work, Extra Work, and Additional Work.

GC 8.02.05.11 Payment Inclusions

- .01 Except where there is agreement in writing to the contrary, the compensation, as herein provided, shall be accepted by the Contractor as compensation in full for profit and all costs and expenses arising out of the Work, including all cost of general supervision, administration, and management time spent on the Work, and no other payment or allowance shall be made in respect of such Work.

GC 8.02.06 Final Acceptance Certificate

- .01 After the acceptance of the Work or, where applicable, after the Warranty Period has expired, the Contract Administrator shall issue the Final Acceptance Certificate. The Final Acceptance Certificate shall not be issued until all known deficiencies have been adjusted or corrected, as the case may be, and the Contractor has discharged all obligations under the Contract.

GC 8.02.07 Records

- .01 The Contractor shall maintain and keep accurate Records relating to the Work, Changes in the Work, Extra Work, Additional Work and claims arising therefrom. Such Records shall be of sufficient detail to support the total cost of the Work, Changes in the Work, Extra Work, Additional Work and claims arising therefrom. The Contractor shall preserve all such original Records until 12 months after the Final Acceptance Certificate is issued or until all claims have been settled, whichever is longer. The Contractor shall require that Subcontractors employed by the Contractor preserve all original Records pertaining to the Work, Changes in the Work, Extra Work, Additional Work and claims arising therefrom for a similar period of time.
- .02 The Owner may inspect and audit the Contractor's Records relating to the Work, Changes in the Work, Extra Work, and Additional Work at any time during the period of the Contract. The Contractor shall supply certified copies of any part of its Records required, whenever requested by the Owner.

GC 8.02.08 Taxes

- .01 Where a change in Canadian Federal or Provincial taxes occurs after the date of tender closing for this Contract, and this change could not have been anticipated at the time of Tender, the Owner shall increase or decrease Contract payments to account for the exact amount of tax change involved.
- .02 Claims for compensation for additional tax cost shall be submitted by the Contractor to the Contract Administrator on forms provided by the Contract Administrator to the Contractor. Such claims for additional tax costs shall be submitted not less than 30 Days after the date of Final Acceptance.
- .03 Where the Contractor benefits from a change in Canadian Federal or Provincial taxes, the Contractor shall submit to the Contract Administrator, on forms provided by the Contract Administrator, a statement of such benefits. This statement shall be submitted not later than 30 Days after Final Acceptance.
- .04 Changes in Canadian Federal or Provincial taxes that impact upon commodities, which when left in place form part of the finished Work, or the provision of services, where such services form part of the Work and where the manufacture or supply of such commodities or the provision of such services is carried out by the Contractor or a Subcontractor, are subject to a claim or benefit as detailed above. Services in the latter context means the supply and operation of Equipment, the provision of labour, and the supply of commodities that do not form part of the Work.
- .05 The Contractor shall add the Harmonized Sales Tax (HST) to all invoices.

GC 8.02.09**Liquidated Damages**

- .01 When liquidated damages are specified in the Contract and the Contractor fails to complete the Work in accordance with the Contract, the Contractor shall pay such amounts as are specified in the Contract Documents.

Section No. 3

General Conditions

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For the purposes of this Contract, the OPS General Conditions of Contract (OPSS.MUNI 100, November 2006) shall be amended as set out herein.

3.0 Scope

This contract is for the following:

The contract includes supply of all material, labour and equipment to complete the work as set out in the Contract Documents and on the drawings.

3.1 Definitions

For the purpose of this contract the following definitions apply:

- I. Town means the Corporation of the Town of Milton
- II. Owner means the Corporation of the Town of Milton
- III. Halton or Region means The Regional Municipality of Halton
- IV. Contract Time (GC 1.04) shall be changed to read “means the time stipulated in the Contract Documents (project commencement to issuance of Completion Certificate by the Contract Administrator), including any extension of the Contract Time made pursuant to the Contract Documents.

GC 1.04.01 shall be revised as follows:

The definition of “Performance Bond” is amended by adding the following: “The form of the Performance Bond will be in the form prescribed under the Construction Act if Contractor elects to provide the required Maintenance Security for the Warranty Period as a standalone bond. If Contractor elects to provide the required Maintenance Security for the Warranty Period within the terms of the Performance Bond, the Performance Bond will be the form prescribed under the Construction Act, as amended to the satisfaction of Owner to meet the Maintenance Security requirements hereunder.”

The following two definitions shall be added:

“Construction Act” means the Ontario *Construction Act*, RSO 1990, Chapter C30.

“Labour and Material Payment Bond” means the type of security furnished to the Owner to guarantee payment to Subcontractors and suppliers for Work performed in accordance with the Contract and to the extent provided in the bond. The form of the Labour and Material Payment Bond will be in the form prescribed under the Construction Act.

3.2 Occupational Health & Safety

The Town is committed to promoting health and safety in the workplace by preventing accidents, injuries and occupational illnesses. In keeping with this policy, all contractors (and, where applicable, their sub-contractors) should be aware of and abide by the Occupational Health and Safety Act, R.S.O. 1990, prior to commencing, during and after completion of all work activities engaged in on Town premises or projects.

The Contractor shall:

- I. Comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public health;
- II. Be responsible for the safety of all workers and equipment on the Project in accordance with all applicable legislation;

- III. Provide and maintain adequate barricades, warning signs, out of order signs and all necessary safety precautions;
- IV. The Contractor shall at all times have available a competent supervisor who is authorized to act on his/her behalf and who is to ensure that work is properly and safely carried out, so as to avoid any misunderstanding as to the extent of the Contractor's responsibility, the Contractor, by executing the Contract unequivocally acknowledges that the Contractor is the employer and Constructor within the meaning of the Act.

In the event the Contractor deems any system or equipment to be unsafe, the Contractor shall take remedial action and immediately notify the Town. The Contractor shall not leave the premises until steps have been taken to protect the public and occupants from all hazards in or with materials or equipment.

3.3 Law of the Contract

A new Clause GC1.08 shall be added, as follows:

GC 1.08 Governing Law

- .01 The Contract shall be construed and interpreted in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.
- .02 **The Owner and the Contractor acknowledge and agree that:**
 - a) **this Agreement was signed, and resulted from a procurement process (within the meaning set out in Section 87.3 of the Construction Act) that was commenced, on or after July 1, 2018, but before October 1, 2019; and**
 - b) **amendments to the Construction Act that are to be proclaimed and come into force on July 1, 2018 are applicable to this Agreement, but amendments to the Construction Act that are to be proclaimed and come into force on October 1, 2019 are not applicable to this Agreement; and**
 - c) **the Contractor will incorporate into its contracts with Subcontractors and Suppliers, and ensure that all Subcontractors and Suppliers are made aware of, these acknowledgements and agreements.**

3.4 Contract Administrator's Authority

Clause GC3.01 – 15 shall be revised to read:

"The Contract Administrator will have the authority to temporarily suspend work for such reasonable time as may be necessary to facilitate the checking of any portion of the Contractor's construction layout or the inspection of any portion of the Work. There shall not be any extra compensation for the suspension of work in either time or money."

3.5 Subcontracting by the Contractor

Clause GC 3.09 shall be revised by adding the following as a new Clause GC 3.09.07: "To the extent that the Contractor requires any subcontractor to be bonded, the Contractor shall require each such subcontractor meet the requirements of Clause GC 6.04, adjusted only to reflect that such bonds are to be obtained by the applicable subcontractor instead of the Contractor."

3.6 Default by the Contractor

Clause 4.05-02 shall be revised by adding the following to the end of the paragraph: "Upon a termination, the Owner may publish a notice of termination in the form and manner prescribed in the Construction Act. For greater certainty, a termination in accordance with this Contract will be effective whether or not a notice of termination is published."

3.7 Termination of the Contract

Clause GC 4.10-01 shall be revised by adding the following to the end of the paragraph: "Upon a termination, the Owner may publish a notice of termination in the form and manner prescribed in the Construction Act. For greater certainty, a termination in accordance with this Contract will be effective whether or not a notice of termination is published."

3.8 Insurance

Add the following as new Clause GC 6.03.07.08:

"The insurance shall be maintained continuously from the commencement of the work until the end of the Warranty Period following the date of the Completion Certificate."

The Contractor shall fully insure the Work in the names of the Contractor, the Town and the Contract Administrator, as their interests may appear against loss or damage from fire, explosion, acts of nature, or other causes, until the final completion and taking over of the work by the Town, and shall pay the premiums for such insurance. A copy of all insurance policies shall be provided to the Town.

Should the Contractor fail to take out satisfactory policies and to maintain them until the final completion and taking over of the Work by the Town, then the Town itself may take out proper policies at the expense of the Contractor.

3.9 Ontario Provincial Standard Specifications

The Work shall be done in accordance with the requirements of the current Ontario Provincial Standard Specifications except where the Standard Specifications are changed, replaced, or added to by the Special Provisions, and shall form, inter alia, part and parcel of this Contract.

All Material required to complete the Work under the Contract shall be supplied by the Contractor and compensation therefore shall be deemed to be included in the prices bid for the items of Work for which it is to be used.

3.10 Contract Administrator's Approval and Action

Where reference is made in the Ontario Provincial Standard Specifications to the Ministry's approval of action in matters contained in this Contract, the context shall be read as if it were written about the Contract Administrator's approval of action, and no division of responsibility for approval of action shall be deemed to exist between the Ministry and the Contract Administrator.

3.11 Instructions to the Contractor

The Contract Administrator or his/her representative may issue such instructions, statements, notices or minutes to the Contractor from time to time, as they deem necessary. The Contractor will be allowed one week to file a written protest setting forth in detail any disagreements; otherwise, such statements, notices, instructions or minutes shall be deemed as acceptable to the Contractor.

3.12 Bonding

Clause GC 6.04 shall be replaced in its entirety with the following:

.01 Prior to commencing the Work, the Contractor shall provide the Owner with the Performance Bond, the Labour and Material Payment Bond, and any other surety bonds in the minimum amount and the form required by the Construction Act, and the greater amount required in the Contract Documents, if so required.

.02 Such bonds shall be issued by a duly licensed surety company authorized to transact a business of suretyship in the Province of Ontario which is permitted to issue Performance Bonds and Labour and Material Payment Bonds in the Province of Ontario, and shall be in a form required by the Construction Act and to the satisfaction of the Owner. The bonds shall be maintained in good standing until the fulfilment of the Contract.

3.13 Contractor's Right to Stop the Work or Terminate the Contract

Clause GC7.10 is deleted in its entirety.

3.14 Changes

GC3.10 of the General Conditions is modified for purposes of this Contract in cases where the Owner requests the Contractor to submit cost quotations in advance for any changes in the Work, Extra Work or Additional Work.

For changes in the Work, Extra Work or Additional Work approved in advance by the Contract Administrator in accordance with cost quotations submitted by the Contractor, payment shall be based on the approved quoted cost and the requirements of GC3.14 and GC8.02 shall not apply.

3.15 Claims, Negotiations, Disputes

Clause GC3.13.03 – 02 shall be amended to read

“The Contractor shall give written notification of its intent to submit a claim for Extra Work prior to the commencement of that Work; otherwise claims for Extra Work will not be considered.

Clause GC3.13.03 – 03) shall be amended to read:

“The Contractor shall submit claims not later than 30 days after the date of Substantial Performance identifying the item or items in respect of which the claim arises, stating the grounds upon which the claim is made and submitting the records maintained by the Contractor supporting each claim.”

Clause GC3.14.06 – 01) shall be amended to read:

“Payment of the claim will be made on the next payment certificate issued after the date of resolution of the claim or dispute. Such payments will be made according to the terms of Section GC8, “Measurement and Payment”.

3.16 Retention and Release of Holdback Monies

The Town in accordance with the Construction Act shall retain Ten percent (10%) of all monies due to the Contractor as indicated in the monthly payment certificate.

The Contract Administrator shall deem the project attains Substantial Performance as per GC 1.06 and GC 3.01.08. After the expiration of the 60 Days (lien period) and after the Contract Administrator is in receipt of the Statutory Declaration, WSIB Clearance Certificate and proof of General Liability Insurance for the entire Warranty Period, and providing that no notice of liens, non-payment or other claims against the Contract have been received, and subject to the Construction Act, the Corporation shall release to the Contractor all remaining holdback.

3.17 Maintenance Security

Maintenance Security for the Warranty Period for warranties and deficiencies is to be provided either within the terms of the Performance Bond or as a standalone bond in the amount of (i). five percent (5%) of the total Contract price for contracts valued at one million dollars (\$1,000,000) or less OR (ii). two and one half percent (2.5%) of the total Contract price for contracts valued at greater than one million dollars (\$1,000,000). If Contractor elects to provide the Maintenance Security as a standalone bond, Contractor shall provide such standalone bond at the time it provides the Performance Bond.

3.18 Contractor’s Right to Stop the Work or Terminate the Contract

Clause 7.10 shall be revised by adding the following new paragraph:

“.06 Upon a termination, the Owner may publish a notice of termination in the form and manner prescribed in the Construction Act. For greater certainty, a termination in accordance with this Contract will be effective whether or not a notice of termination is published.”

3.19 Advance Payment for Material

Clause GC8.02.03 – 01 shall be amended to read:

“The Owner may make advance payments for Material intended for incorporation in the Work upon the written request of the Contractor and according to the following terms and conditions:

- a) The Contractor shall deliver the Materials to a site approved by the Contract Administrator and the Contractor shall, in advance of receipt of shipment of the Material, arrange for adequate and proper storage facilities and notify the Contract Administrator of their location(s).”

The remainder of Clause GC8.02.03 is unchanged.

3.20 Certification and Payment

- I. Clauses GC8.02.04.02 and GC8.02.04.03 are deleted in their entirety.
- II. Add “Subject to the Construction Act,” to the beginning of 8.02.04.05.03.
- III. The following is in addition to Clause GC8.02.04.06:
 - The issuance by the Contract Administrator of a letter certifying that the entire work has been completed will not mean that the Contract Administrator assumes any responsibility or liability, in full or in part, for the Contractor’s responsibilities and liabilities at the completion of the Contract or in the future to carry out all the work and any part of it in accordance with the terms and specifications of this Contract.
- IV. Clause GC8.02.04.05-04 shall be revised by replacing “but subject to the provisions of the Construction Act” with “but subject to any notice of non-payment delivered by the Owner and the provisions of the Construction Act”.
- V. Clause GC8.02.04.07.03 shall be revised by replacing “but subject to the provisions of the Construction Act” with “but subject to any notice of non-payment delivered by the Owner and the provisions of the Construction Act”.
- VI. Clauses GC8.02.04.08, GC8.02.04.09 and GC8.02.04.10 are deleted in their entirety.
- VII. Clause GC8.02.04.11 – 01) shall be revised to read:

“Pursuant to Section 12 of the Construction Act – Set-off by Trustee, the Owner may retain from monies owing to the Contractor under this Contract or any other contract related to the Project an amount sufficient to cover any outstanding or disputed liabilities including but not limited to the cost to remedy deficiencies, the reduction in value of substandard portions of the work, claims for damages by third parties which have not been determined in writing by the Contractor’s insurer, undetermined claims by the Owner under paragraph (a) of Clause GC8.01.02, Variations in Tender Quantities, any assessment due the Workers’ Compensation Board and any monies to be paid to the workers and any liquidated damages assessed by the Owner pursuant to Clause GC8.02.09.”
- VIII. Clause GC8.02.04.12 shall be deleted in its entirety.

3.21 Payment on Time and Material Basis

Clause GC8.02.05.01 – 01) is amended to read:

“Working Time” means each period of time during which a unit of Equipment and/or labour is actively and of necessity engaged on a specific operation.

Clause GC8.02.05.08 – 01, delete everything from and after “calculated on the following basis” and replace with “of “5% of the cost of the Work on a Time and Material Basis.”

Clause GC8.02.05.09 – 04) is amended by replacing “60” with “30” and adding the following as a second sentence: “All claims for Extra Work must be submitted on the Ministry of Transportation of Ontario Form PH-CCC-796 “Force Account – Summary for Payment.”

3.22 Time

Time shall be the essence of this agreement.

3.23 Progress of the Work and Time for Completion**SPECIFIED WORK PERIODS**

This Contractor shall commence work on the seventh day after the date that the Contractor has received written confirmation of the award or as stipulated within the contract documents or as agreed to by the Contractor and the Contract Administrator.

The contractor will have access to the site as of **June 17, 2019.**

The Contractor shall work diligently to complete all works as identified in the “Quantity and Price Schedule” including extra work as ordered and all deficiencies on or before:

September 30, 2019 or within **73** working days,

If the above specified time limit is not sufficient to permit completion of the work by the Contractor working a normal number of hours each day or week on a single daylight shift basis, it is expected that additional and/or augmented daylight shifts will be required throughout the life of the Contract to the extent deemed necessary by the Contractor to insure that the work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various items of work and no additional compensation will be allowed therefore.

Until final acceptance by the Town and upon written notification from the Contract Administrator, the Contractor agrees to rectify within seven working days any or all deficiencies that may arise from the previous work. With the completion of all works, including all project deficiencies and final clean up, the Contract Administrator shall establish a project completion date and issue the Project Completion Certificate (see GC 1.04) for the Contract.

A Working Day is defined as any day:

- (a) Except Saturdays, Sundays and Statutory Holidays.
- (b) Except a day on which the Contractor is prevented by inclement weather or conditions resulting immediately there from adverse to the controlling operation or operations, as determined by the Contract Administrator, from proceeding with at least 60% of the normal labour and equipment force engaged on such operation or operations for at least five (5) hours toward completion of such operation or operations. A controlling operation or operations is to be construed to include any feature of the work considered at the time by the Contract Administrator and the Contractor, which, if delayed, will delay the time of completion of the Contract.

The Contract Administrator will record, in the periodic project meeting minutes, the number of working days charged to the Contract for the preceding period, the number of working days specified for completion of the Contract and the number of working days remaining to complete the Contract. The Contractor will be allowed one week in which to file a written protest setting forth in what respects the said weekly statement is incorrect, otherwise, the statement shall be deemed to have been accepted by the Contractor as correct.

(c) Alternative Scheduling or Exemptions

If the Contractor chooses to work beyond the normal work week, Monday to Friday, excluding holidays, 7:00 a.m. to 6:00 p.m., then he will be responsible for inspection costs incurred by the Town on week days after six o'clock (6:00) p.m. or on Saturdays, Sundays and holidays. Town costs will include all direct and indirect Consulting fees.

No Sunday work will be permitted except in the case of emergency, and then only with the written permission of the Contract Administrator and to such extent as he may judge to be necessary.

The Contractor shall refrain from work on days that are legal holidays in Ontario. In case he desires to work on any such holiday or Saturday or Sunday, he shall notify the Contract

Administrator in writing at least four (4) days in advance of such holiday that he desires to work, stating those places where said work will be conducted. If the Contractor fails to give such

notice in advance of any holiday, such failure shall be considered as an indication that no work requiring the presence of a Contract Administrator or Inspector is to be done by the Contractor.

- I. by reason of changes or alterations made under Part GC 3.11 of Section 4, General Conditions or;
- II. by reason of any breach of contract or prevention by the Corporation, or other contractor of the Corporation of any employee of any one of them or;
- III. by reason of delay by the Corporation in issuing instructions or information or in delivering materials or;
- IV. by any other act or neglect of the Corporation or any other contractor of the Corporation or any employee of any one of them or;
- V. for any cause beyond the reasonable control of the Contractor or;
- VI. by Acts of God, or of the Public Enemy, Acts of the Province or of any Foreign State, Fire, Floods, Epidemics, Quarantine Restrictions, Embargoes or delays of Sub-Contractors due to such causes; The time of completion shall be extended in writing at any time on such terms and for such period as shall be determined by the Contract Administrator, and notwithstanding such extensions, time shall continue to be deemed of the essence of this contract.

The Contract Administrator may, in writing, require the Contractor to cease or limit his operations under the Contract, on any day or days if the operations are of such a nature, or if the work is so located, or if the traffic is of such a volume that the Contract Administrator deems it necessary or expedient so to do.

An application by the Contractor for an extension of time as herein provided shall be made to the Town or Contract Administrator in writing on the form prescribed at least fifteen days prior to the date of completion fixed by the Contract. All bonds or other surety furnished to the Town by the Contractor shall be amended where necessary at the expense of the Contractor to provide coverage beyond the date of any extension of time granted, and the Contractor shall furnish the Town with evidence of such amendment of the bonds or other surety.

Any extension of time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Town whatsoever under this Contract, and all of such rights shall continue in full force and effect after the time limited in this Contract for the completion of the work and whenever in this Contract power and authority is given to the Town or the Contract Administrator or any person to take any action consequent upon the act, default, breach, neglect, delay, non-observance or non-performance by the Contractor in respect of the work or Contract, or

any portion thereof, such powers or authorities may be exercised from time to time and not only in the event of the happening of such contingencies before the time limited in this Contract for the completion of the work but also in the event of the same happening after the time so limited in the case of the Contractor being

permitted to proceed with the execution of the work under an extension of time granted by the Contract Administrator.

3.24 Liquidated Damages

It is agreed by the parties to the Contract that in case all the work called for under the Contract is not finished or completed by the date of completion specified, aforementioned damage will be sustained by the Town and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Corporation will sustain in the event of and by reason of such delay and the parties hereto agree that the Contractor will pay to the Town the sum of **\$ 1000** per day for liquidated damages for each and every calendar day's delay in finishing the work beyond the completion date prescribed. It is agreed that this amount is an estimate of actual damage to the Town that will accrue during the period in excess of the prescribed dates of completion.

The Town may deduct any amount under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Town.

3.25 Warranty

The Contractor warrants that with ordinary wear and tear the works shall, for a period of twenty-four (24) months from the date of the issuance of the **Substantial Performance Certificate**, remain in such condition as will meet with the approval of the Contract Administrator, and that he will, upon being required by the Contract Administrator, make good in any manner satisfactory to the Contract Administrator any imperfections therein due to materials used in the construction thereof or workmanship. The decision of the Contract Administrator as to the nature, extent and cause of such imperfections and the necessity for remedying the same shall be final.

Should the Contractor fail to comply with the directions of the Contract Administrator, the latter may, at his/her sole judgment and after giving the Contractor twelve (12) hours notice, perform the necessary work, provided that in the event of any emergency, of which the Contract Administrator shall be the sole judge, the Contract Administrator may forthwith without further notice. All the cost of such work shall be deducted from monies owing to the Contractor.

The Contractor warrants also that the materials comply with the Specifications and that the works and materials are free from defects in workmanship and material except material defects, which exist because the Contractor strictly followed the Specifications or due to service demands beyond the demands established by the Specifications and drawings.

Clause GC7.16-02) is amended to read as follows:

“Subject to the previous paragraph the Contractor shall correct promptly, at no additional cost to the Owner, defects and/or deficiencies in the work which appear prior to and during the Warranty Period noted below from the date of Completion of the Work as set out by the Completion Certificate or such longer period as may be specified for certain Materials or Work. The Contract Administrator will promptly give the Contractor written notice of observed defects or deficiencies.”

3.26 Specification Drawings

During the process of the work, additional drawings may be issued by the Contract Administrator as necessity requires to supplement, supersede, or further set forth details as shown on the drawings hereto attached (see List of Drawings), and such additional drawings shall thereupon become part of these specifications.

The Contractor shall be governed by figured dimensions, as given on the drawings. Where required dimensions are not shown in figures, the Contractor shall obtain such dimensions from the Contract Administrator before proceeding with the construction of the portion of the work to which they refer. In every case, detail drawings shall take precedence over general drawings.

3.27 Standard Specifications

Where specifications require the approval or participation of Contract Administrators or Departments or Corporations other than the Contract Administrator or the Town, they shall be read as if they refer to the Contract Administrator or the Town respectively named in this Contract.

3.28 Order of Precedence

Clause GC2.02 – 01) shall be revised to read:

“In the event of any inconsistency or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:

- I. Agreement
- II. Addenda
- III. Special Provisions
- IV. Information for Bidders
- V. Contract Drawings
- VI. Supplemental Specifications
- VII. Standard Specifications
- VIII. Tender
- IX. Supplemental General Conditions
- X. General Conditions (OPSS)
- XI. Working Drawings

Later dates will govern within each of the above categories of documents.”

3.29 Construction Schedule

In order to fulfill the conditions for which the work has been designed, the Contractor and the Contract Administrator shall arrange, prior to the commencement of construction, a definite program or schedule determining the order in which the work is to be carried out so as to ensure that the underlying conditions on which the design is based shall be maintained in their entirety, and without undue interference with the expeditious and economical carrying out of the Contractor's projected scheme of procedure.

The several sections of the work shall be carried out in such order, as to permit the completion of the whole within the stipulated time, and as closely as possible in conformity with the agreed upon construction schedule.

3.30 Construction Power

The Contractor shall make all arrangements and pay all charges for supplying and maintaining electrical power required for his work at the sites.

3.31 Contract Administrator's Field Office

The Contractor shall supply and set up one construction field office for the sole use of the Contract Administrator at the location designated, for the entire duration of the Contract. The field office shall be a minimum of 2.5 m x 6 m and shall be suitably equipped with telephone, fax and computer data links, washroom/toilet facilities, water cooler, cleaning services. The unit shall be complete with lighting, heating and air conditioning. The Contract Administrator prior to delivery to the field shall approve the field office and equipment.

The Contractor shall bear all cost of supplying and setting up the field office, including costs for hydro hook-up and consumption, installation and service cost of telephone (excluding long distance call

charges), costs for heating, taxes, insurance, first aid kit, permit costs and removal of the field office from the site following completion of the project.

No direct payment will be made for the above conveniences or for any labour, materials or other expenses in connection therewith and the cost thereof shall be included in the prices bid for other items of the Contract.

3.32 Superintendence of the Work

The Contractor shall coordinate the work of all subcontractors.

The Contractor shall keep a competent superintendent on the site at all times to coordinate the work, in addition to subcontractor's supervisory personnel.

The superintendent shall represent the Contractor and written directions given him/her shall be deemed to have been given to the Contractor and the superintendent shall have the authority to act upon these directions.

The Contractor shall be responsible for protecting the work of all subcontractors from damage during construction.

The Contractor shall have a competent person on duty at all times for emergency calls after construction hours and during weekends. It shall be the Contractor's responsibility to supply the Contract Administrator with the name and telephone number(s) of the person(s) to be contacted during these periods.

3.33 Reservation of Property Bars and Boundary Markers

It is the contractor's responsibility to protect all property bars and boundary markers on the project. In the event that a bar or marker is altered, damaged or removed, the contractor shall employ a registered Ontario Land Surveyor to re-instate the bar or marker to its correct and legal location. The contractor shall assume all associated costs.

3.34 Stakes, Lines and Levels

The Contract Administrator will only provide horizontal control points together with pertinent benchmark locations and elevations for use by the Contractor in setting out the project. It is the Contractor's responsibility to provide all other survey and layout work required and due allowance for this work shall be made in the total contract price. For grade work the Contractor shall supply and erect batter boards, boning rods, or other devices or systems, approved by the Contract Administrator, to facilitate the construction of the work. When batter boards are being used to set grade for pipes at least three sights shall be used.

3.35 Location and Protection of Utilities, Structures and Properties

The Town disclaims any responsibility or liability for the support and protection of sewers, pipes, conduits, tracks or other structures owned by the Town, private companies, or individuals enjoying special franchise or occupying any portion of the streets or right of way on or below or above the surface.

The Contractor is directed to examine carefully the location of the work and to make special enquiry of the companies or individuals owning, controlling or operating said pipes, conduits, tracks and other structures, and to determine to his own satisfaction the character, size, position and lengths of such pipes, conduits, tracks and structures and to inspect the public records of the various Departments having cognizance and control of pipes, conduits and sewers, and to make further personal inspection and investigation as he may deem proper to determine the correctness of the information, so obtained. It shall be clearly understood that the Town does not insure the accuracy of such reports or information and the Contractor shall not make any claim against the Town or Region for

damages or extra work caused or occasioned by his relying upon such records, reports, or information, either as a whole or in part.

The Contractor shall, at his own cost and expense, and in a manner approved of by the Contract Administrator, sustain in their places and protect from direct or indirect injury, all utility services whether public or private over or underground, sidewalks, curbs, pavements, buildings, bridges, walls, fences, trees, hedges, ornamental shrubs, and all other structures or property in the vicinity of the work, or which appear within the excavation trench or tunnel and he shall assume all costs and expenses for direct or indirect damage which may be occasioned by injury to any of them.

Clause GC2.01-01 shall be revised to read:

“The location of all mainline underground utilities which will affect the Work will be shown for identification purposes only. Contractor is responsible for the confirmation of all utility locations”.

3.36 Interruption of Services

If it is necessary to make connections to or alter existing services or public utilities under this Contract, or if any interruption of existing pipes or conduits should occur, the Contractor shall inform the Town of said services or utilities at the proper time. The Contractor shall not interrupt any services or open any existing valve, and shall not make connections to them unless the necessary shut-off of valves or disconnections have been made by the Owner of the respective utility or service. The cost of labour, plant, overhead and materials to the Owner of the respective utility or service for shutting, disconnecting, or reinstating services or utilities shall be at the Contractor's expense if necessitated by accidental or improper methods of construction by the Contractor.

3.37 Other Contractors Within or Adjacent to the Limits of the Contract

The Contractor is advised that, as other work may be in progress within and adjacent to the limits of this contract, he shall co-operate with other contractors, utility companies and the Town and they shall be allowed free access to their work at all times. The Contract Administrator reserves the right to alter the method of operations on this contract to avoid interference with other work.

The Contractor is responsible for the co-ordination and scheduling of all utility work (by his own forces) and utility authorities **as may be specified in the Special Provisions**.

The information regarding utility relocations is based on information provided to the Town by the utility companies. The accuracy of such information cannot be guaranteed by the Town. The Contractor should contact the utility companies involved for current information on their relocation schedule. The Town does not guarantee the utility relocations and will not entertain any claims for damages for any costs due to delays by the utility companies in relocating their plant.

The Contractor shall attend utility co-ordination meetings and prepare the contract schedule to reflect the following:

- prepare schedule to reflect time constraints for relocation of utilities as provided by each utility authority including distance separation (60 m minimum) between the Contractor's work and utility crews
- adjust schedule of work to avoid interference with Contractor's operation

The work of utility co-ordination is considered incidental to the work and will not be paid for separately. No additional compensation will be paid to the Contractor for changes to schedule, methods of operation, sequence of work or delays as a result of utility work.

3.38 Maintaining Flow of Utilities

The Contractor shall, at his own cost and expense, permanently provide for and maintain gas and water services and the flow of all sewers, drains, house or inlet connections, and all watercourses, which may be met with during the progress of the work. He shall not allow the contents of any sewer, drain, house or inlet connection to flow into the trench or sewer constructed under this Contract, except by permission of the Contract Administrator.

3.39 Temporary Work

The Contractor shall supply at his own cost all plant, material, machinery, labour and supplies and all ventilation and un-watering, for all classes of preliminary, temporary, or false work necessary for the carrying out of his Contract.

3.40 No Claim for Delays

No claim will be accepted by the Town regarding delay for utility relocations should any be required during the course of construction.

GC3.07 Delays – amended to read “Abnormal Weather will entitle the Contractor to an extension of time but **not** for additional compensation”.

3.41 Storage of Machinery and Materials

The Contractor shall be governed by the direction of the Contract Administrator in all matters connected with or concerning the storage of machinery, materials and supplies along the lines of the work, and shall, at his own cost and expense, shift or remove such machinery, materials and supplies immediately upon notice to do so from the Contract Administrator.

3.42 Private Lands

The Contractor shall not enter upon or occupy with workers, tools, equipment or materials of any nature, any lands outside of the public streets and roadways and the right-of-way or easements shown on the plans, except after consent has been received by him from the proper parties, a certified copy of which consent shall be furnished to the Contract Administrator.

3.43 Rights of Others

If, during the progress of the work covered by this Contract, it is necessary for other contractors or persons to do work in or about the site of the work, the Contractor shall afford such facilities as the Contract Administrator may require.

3.44 Quality of Materials

I. Clause GC5.02.04 shall be amended to read:

“The Contractor shall obtain for the Contract Administrator the right to enter upon the premises of the Material manufacturer or supplier to carry out such inspection, sampling and testing as specified or as requested by the Contract Administrator. No Material that has not been approved by the Owner shall be incorporated in the Works”.

II. Materials delivered to site for incorporation into the works shall be inspected and/or tested at the discretion of the Contract Administrator.

III. Testing of previously tested material and/or workmanship shall be carried out at the Contract Administrator’s discretion at the Contractor’s expense.

IV. All materials shall conform to the samples submitted and approved.

3.45 Substitutions

Clause GC5.04 – 03) shall be replaced by the following: “If the proposed substitution is approved by the Contract Administrator, the Contract Administrator and the Contractor shall negotiate an appropriate price reduction.”

3.46 Traffic Control

Further to GC1.05, the traffic control in this Contract shall be in conformance with the Ontario Traffic Manual, Book 7. The Contractor is required to submit a Traffic Control Plan(s) which meets the requirements of the Ontario Traffic Manual, Book 7.

3.47 Road Closure Procedures

Detour signage and maintenance shall be shown as a lump sum item in the schedule of unit prices.

I. Project Design

The contractor shall establish a detailed signage plan for the construction zone and associated detour routing if required according to Ontario Traffic Manual Book 7.

The signage plan shall be included in the project contract documents.

Signage supply, installation, maintenance and removal are to be a lump sum item indicated in Special Provisions and Schedule of unit prices.

The Contractor shall provide additional signage as directed by Contract Administrator.

The Contractor shall inspect all signage daily and repair and/or replace as required

II. Road Closure Notification Signage

Notice of Road Closure signs shall be erected a minimum of 2 week prior to closure by the Town.

Signs shall be installed at the each intersection on the affected road section.

The Contract Administrator or Town shall provide written notification of road closure Emergency Services and School Boards.

Contract shall give written notice to residents/businesses with the affect construction zone

III. Road Opening

- The length of road upon which work has been completed shall be opened to traffic when and where directed by the Contract Administrator, but such opening shall not constitute final acceptance of the work.
- Town to remove advanced road closed signage after notification by Contract Administrator.
- Contractor to remove all additional signage

The Contract Administrator or Town shall provide written notification of road closure Emergency Services and School Boards.

Contract shall give written notice to residents/businesses with the affect construction zone.

3.48 Dust Control

The Contractor shall take such steps as may be required to prevent dust nuisance resulting from project operations either within the right-of-way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a roadway through the work.

Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust,

wherever dust would affect traffic or wherever dust would be a nuisance to residents/businesses of the area where the work is being carried out.

The cost of all such preventative measures shall be borne by the Contractor except, however, where water or calcium chloride is used to reduce the dust caused by traffic on a roadway which it is the Contractor's responsibility to maintain for public traffic, in such cases the cost of such quantities of water and calcium chloride to restrict dust to acceptable levels, as are authorized by the Contract Administrator, shall be paid for by the Town at the contract prices for the appropriate tender items for Supplying and Placing of Water or Supplying and Placing of Calcium Chloride or both.

3.49 Disposal of Surplus, Excavated Material

The agreed unit prices in the Form of Tender shall include the cost of removal and disposal of all surplus excavated material. This material shall be disposed of in disposal areas provided by the Contractor outside the limits of the Contract, at his own expense. All material being placed on private lands within the boundaries of the Town of Milton requires that the property owner make application to the Town for a permit under Bylaw No. 23-96 as amended. No materials shall be placed on private lands prior to the project Consultant receiving a copy of the permit.

3.50 Maintaining Roads and Detours

Clause GC7.06 – 05 shall be revised to read:

“The Contractor will bear the cost of maintaining, in a satisfactory condition for traffic, a road through the working area. The road through the Work will include any detour constructed in accordance with the contract document or required by the Contract Administrator. Compensation for all labour, Equipment and Materials for detours shall be at the contract prices appropriate to the Work. Notwithstanding the foregoing, the cost of blading required to maintain the surface of such roads and detours shall be deemed to be included in the prices bid for the various tender items and no additional payment will be made.”

3.51 Maintaining Flow of Traffic

The Contractor shall provide for two lanes of traffic during the construction period. No section of the road shall be closed without the written approval of the Contract Administrator.

3.52 Subsurface Investigations

The information relating to soils investigations at the site of work which may appear in the plans and specifications and in other documents was communicated by the Town and/or Contract Administrator to the Contractor for his use in the preparation of his tender. The Tenderer is directed to examine the soils investigation reports that are available for examination at the Milton Town Hall (150 Mary St. 2nd Floor, Contract Administrators Services) or the office of the Consulting Contract Administrators. The Contractor shall not claim at any time after the submission of his tender that there was any misunderstanding in regard to the conditions imposed by the Contract.

3.53 Closed Circuit Inspection of Pipe Sewers

All storm sewers and lateral connections installed are subject to inspection by closed circuit television inspection.

The Contractor will bear the cost of the first TV inspection including operators, equipment rental and any other costs related to this operation. The Contractor shall supply the Contract Administrator with written report and a copy of the sewer inspection video on CD after the completion of each inspection.

All debris and crust shall be removed from each pipe and manhole interior before closed circuit TV inspection.

In case the TV inspection reveals any defects in the work, the Contractor will repair the same at his cost to the satisfaction of the Contract Administrator. Any second or subsequent inspection that may be required to confirm deficiency repairs and shall be completed at the Contractor's cost.

3.54 Maintenance of Existing Drainage

All sewers or water courses interfered with during the construction, whether shown on the drawings or not, shall be adequately maintained by the Contractor for both dry weather and storm water flow, by either constructing a satisfactory flume or by-pass sewer or by pumping, or by other methods acceptable to the Town, and/or Region and/or Conservation Halton. All gutters and storm water inlets encountered shall be kept open for drainage. The Contractor will not be permitted to raise levels in sewers or watercourses to the extent of flooding basements or adjacent properties, and it is expressly pointed out, that any damage caused by basement flooding or otherwise which results from the Contractor's operations, will be the responsibility of the Contractor.

3.55 Surface and Ground Water Control

The Contractor shall, insofar as is practicable, maintain the site of the works free of surface and ground water so that construction may be carried out in the dry. The disposal of surface and ground water from the works shall be the responsibility of the Contractor.

3.56 Private Entrances

Town of Milton Zoning Bylaw No. 144-2003 regulates all entrances on to private lands.

The Contract Administrator prior to the placement of the curb shall approve all entrance locations and driveway widths. Curb depressions shall not extend beyond the limits of the side lot lines of the property. The contractor shall ensure that the approved driveway width is maintained from the back of the curb to the property line unless otherwise directed by the Contract Administrator. Curb depressions shall be measured from the beginning to the transition from full-face curb to the completion of the transition back to full-face curb. Curb depressions shall be 0.5 metres wider than the approved driveway width. The contractor will be responsible for all costs resulting from the removal and final restoration of any entrance or driveway widening not approved by the Contract Administrator.

3.57 Noise Control

- Noise levels shall be controlled in accordance with local By-laws and the Occupational Health and Safety Act.
- All internal combustion engines shall be equipped with original equipment in proper working order to minimize noise levels in the project area.
- For compressors and pumps operated beyond normal working hours, special measures for noise attenuation will be required.

3.58 Protection of Trees During Construction

The protection of trees not designated for removal shall be completed in accordance with OPSS

If the contract requires work to be completed within the drip line of a tree or trees that are designated not to be removed, operation of equipment within that drip line area shall be kept to the minimum necessary to perform the work required.

In order to minimize root loss, the Contractor will be required to use vertical trench walls and appropriate wall support systems when excavating within the drip line of trees. All exposed roots over 25 mm in diameter shall be cut back cleanly to the soil surface within five calendar days.

If root damage or loss is extensive, portions of the tree shall be pruned. All pruning will be carried out by a qualified and experienced landscape contractor using approved arboriculture techniques and practices. The pruning of trees and shrubs will be carried out in such a manner as to retain as much as possible of the plant's natural form. The Contractor will be responsible for disposing of cut limbs and roots in an approved manner off site. In addition, the remaining root system shall be watered and fertilized by a qualified and experienced landscape contractor.

No extra payment will be made to the Contractor for vertical trenching and trench supports, pruning branches and roots, or watering and fertilizing trees when work is required within the drip line.

I. Trees Located within the Right-of-Way

When the branches of trees located within the right-of-way will interfere with the construction operation, they shall be pruned prior to equipment entering the drip line of the tree.

The branches will be cut back to the nearest suitable trunk, crotch or lateral where they will no longer interfere with the construction operation.

II. Trees Located on Private Property

When the branches of trees located on private property are overhanging the right-of-way or easement and will interfere with the construction operation, they shall be pruned prior to equipment entering the drip line of the tree.

Prior to pruning, the Contractor and Contract Administrator shall contact the property owner to receive permission to cut the branches back to the nearest suitable trunk, crotch or lateral where they will no longer interfere with the construction operation.

Should a homeowner refuse entry to cut branches on private property, then the branches shall be cut vertically at the property line.

3.59 Relocating Existing Street Name and Traffic Control Signage

The unit price bid for "Earth Excavation" shall include relocating all street name and traffic control signage. The contractor shall carefully relocate all signage onto temporary supports along the line of the construction. Upon completion of the construction activities the contractor shall then reinstall all signage on permanent supports in their final locations as directed by the Contract Administrator.

3.60 Increase/Decrease in Hot Mix Asphalt Prices based on the Performance Graded Asphalt Cement Price Index

The Town of Milton will adjust the payment to the Contractor based on changes to the Ministry of Transportation's performance graded Asphalt Cement Price Index unless the Contractor opts out of notifying the Town of Milton in writing within five business days of the award of the Contract. Once the Contractor has opted out of payment adjustments based on the index, the Contractor will not be permitted to opt back in. The price index will be published monthly on the MTO Contract Bulletin and displayed on the MTO web site at (www.raqsa.mto.gov.on.ca). The price index will be used to calculate the amount of the payment adjustment per tonne of new asphalt cement accepted into the Work.

The price index will be based on the price, excluding taxes, FOB from the depots in the Toronto area, of Asphalt Cement PG 58-28 or equivalent. One index will be used to establish and calculate the payment adjustment for all grades. The price index for each month will reflect the previous month's prices.

A payment adjustment per tonne of new asphalt cement will be established for each month in which paving occurs when the price index for the month differs by more than \$15.00/tonne from the price index for the month in which the Tender was awarded. When the price index differential

is less than \$15.00/tonne, there will be no payment adjustment for that month. Payment adjustments due to changes in the price index are independent of any other payment adjustments made to the hot mix tender items.

The payment adjustment per tonne will apply to the quantity of new asphalt cement in the hot mix accepted at the site during the month for which it is used. The payment adjustment for the month will be calculated as follows:

- 1) **When AC prices rise** by more than \$15.00/tonne difference: the payment adjustment to be paid to the Contractor is calculated by subtracting the price index in effect when the Tender was awarded from the price index in effect when paving took place, minus the \$15.00 float. The result is then multiplied by the number of tonnes of PGAC incorporated in the mix(s) as determined by the job mix formula. If the answer is negative, no adjustment will be made.
- 2) **When AC prices fall** by more than \$15.00/tonne difference: the payment adjustment made in favour of the Town of Milton is the result of subtracting the price index in effect when paving took place, plus \$15.00 float, from the price index when the Tender was awarded. The result is multiplied by the job mix formula.

The quantity of new asphalt cement includes all grades of asphalt cement supplied by the Contractor with and without polymer modifiers. For each month in which a payment adjustment has been established, the quantity will be calculated using the hot mix quantity accepted at the site and its corresponding asphalt cement content as required by the job mix formula except for mixes which contain reclaimed asphalt pavement.

For mixes which contain reclaimed asphalt pavement, the quantity of new asphalt cement will be determined from the difference between the asphalt content required by the job mix formula and the asphalt cement content of the reclaimed asphalt pavement incorporated into the hot mix, as calculated by a testing lab approved by the Town of Milton.

Example 1 – AC Prices Increasing

- PGAC 64-28 specified, 3000 tonnes of HL3 @ 5.2 % AC (156.0 tonnes AC)
- Price Index on April 5th, 2001 on Tender closing \$ 290/tonne (PG 58-28)
- Price Index on August 17th – 24th, 2001(actual paving dates - \$ 325/tonne (PG58-28)
- Payment adjustment to be paid to the Bidder:

$$\begin{aligned} & ((\$325 - \$15) - \$290) \times 156 \text{ tonnes (AC)} \\ & = \$20.00 \times 156 \\ & = \$3120.00 \end{aligned}$$

Example 2 – AC Prices Decreasing

- PGAC 58-28 specified, 4500 tonnes of HL-8 @ 4.6 % AC (207 tonnes AC)
- Price Index on April 5th, 2001 on Tender closing \$ 290/tonne (PG 58-28)
- Price Index on October 11th – 18th, 2001 actual paving dates - \$245/tonne (PG 58-28)
- Payment for adjustment for Hot Mix Items reduced by:

$$\begin{aligned} & ((\$290 - (\$245 + \$ 15)) \times 207 \text{ tonnes of AC)} \\ & = \$ 30 \times 207 \\ & = \$ 6,210.00 \end{aligned}$$

Notes:

- 1) The payment adjustment calculated using this formula is full compensation for any and all PGAC grades specified.
- 2) If the AC Index has not changed by \$ 15.00 per tonne then, no adjustment is required.

Section No. 4

Special Provisions

for

Contract Items

SPECIAL PROVISIONS**1. PROJECT DESCRIPTION**

The project consists of interior tenant improvements and exterior finish replacements at the Milton Innovation Centre, 555 Industrial Drive, Milton, ON.

2. DEVELOPMENT PROGRAM

The scope of work can be generally described as follows:

BASE BID

Interior renovations to the existing commercial office space including work in an area of approximately 446 sq.m. on the main floor. The area of work is focused on tenant improvements, removing several existing offices and combining single-use areas into larger multi-use spaces. Work includes demolition of existing partition walls and finishes, upgrades to existing washroom facilities, installation of new floor surfaces, wall finishes and new suspended ceiling assemblies. An existing exterior metal clad accent band above the main floor windows it to be replaced with a new metal cladding assembly. Existing exterior window frames are to be refinished where noted. Mechanical HVAC, plumbing systems and Electrical systems are to be modified and upgraded to suit the new floor plan.

SEPARATE PRICES

- | | |
|------|---|
| SP-1 | Provide pricing for new toilet compartment partitions for Washrooms 014 and 105. Remove & dispose of existing toilet partitions in their entirety and provide new partitions as specified. |
| SP-2 | Provide pricing for 6 new water closets in Washrooms 104 and 105. Install (2) new barrier free water closets and (4) standard water closets as described on Mechanical design drawing M0.2 Section 15400 Plumbing Item 2.1.5 and 2.1.4 |
| SP-3 | Provide pricing for alternate design of bulkheads in Meeting Room 101 (5 locations). Current (i.e. base price) design is shown on Drawings 1/A6 through 4/A6.1 with a gypsum board cove on metal stud framing. Alternate design is detailed on Drawings 5/A6.1 and 6/A6.1 with an acoustic tile cove. |
| SP-4 | Provide pricing for removal of the existing flooring system beneath the existing server equipment in the Ex. Computer Server Room 107 as identified on drawing D2.1 and the installation of new VCT tile beneath this equipment area. New VCT to match adjacent specified |

flooring. The temporary relocation of the existing server equipment is to be by the Owner's IT forces. All work inside of this security cage is to be coordinated with the Owner's IT department.

Refer to attached Consultant's Drawings and Specifications for a detailed description of the work and project requirements.

3. PROJECT SCHEDULE

Refer to Sections 2 and 3 of the Contract for Time, Progress of the Work and Time for Completion detailed requirements.

Time is of the essence for this project.

A project start-up meeting will be scheduled for 2 weeks after notification of award. Contractor to bring a preliminary construction schedule for discussion.

A final construction schedule is to be submitted 1 week after start-up meeting.

Shop drawings are to be submitted *no later than 4 weeks* after notification of award.

The entire scope of this project **must be substantially performed and tested no later than September 30, 2019.**

The Contractor is required to coordinate trades, suppliers, shop drawing approvals and procurement of materials ahead of time to make the above project deadlines viable.

The construction schedule must show a detailed breakdown of the work of all trades indicating sequence, milestones, and critical dates. The schedule must include the Contractors' reasonable expectations for delivery times and long-delivery items, as well as shop drawing process of submittal and approvals. Any planned system shut-downs and all disruptions to the Facility operation outside the construction boundaries must be shown on the schedule.

The Contractor will be held accountable for performing the work in accordance with the approved construction schedule. Alterations to the schedule affect the Town's programs and may not be approved by the Town.

4. CONTRACTOR'S WORK AREA

The Contractor is responsible to provide security & safety in the work area during construction.

The Contractor shall be responsible for the rectification of any damage caused to Town's property by their forces or subcontractors to the satisfaction of the Town of Milton.

The work and work areas shall be kept in a clean and clutter-free state at the end of each working day and shall not interfere with the daily operation of the Facility.

Construction dust, noise and odour shall be controlled as not to disturb the building users. The Contractor is expected to thoroughly plan for and include in the bid price, strategies to mitigate disturbance to the building occupants. Dust, debris and odours will not be tolerated in any occupied areas, ducts, vents and equipment. Noise shall be kept to a minimum. The Contractor is required to plan for adequate ventilation of confined areas, separated from the building ventilation system. Contractor shall protect all openings (including HVAC diffusers, returns, doors and other openings leading to equipment sensitive to dust).

The site shall be cleaned up daily, any debris left in public areas shall be removed immediately.

Material Safety Data Sheets for all WHMIS regulated products brought into the Facilities shall be provided to the Facility's operation manager minimum 48hrs in advance.

Item 3.31 of the Section No. 3 – General Conditions Supplemental is hereby deleted. An office for the Engineer's exclusive use is not required.

The Contractor is responsible for own construction site office if required by the work or Occupational Health and Safety Act.

Power and water may be obtained from the building for use.

Contractors are not permitted to use building washrooms during construction. Portable washrooms shall be included as part of the bid.

Space for storage is not available in any of the Facilities. Contractor is responsible to obtain and pay for storage containers. Obtain approval for location prior to placing storage containers within the property.

Contractor is responsible for own disposal bins. The Facility shall be kept clean and free of clutter/debris at all times. Use of Facility's disposal bins is not permitted and will be subject to penalties.

Contractor is to bring all tools and equipment necessary to perform the work. Contractor's crews are not allowed to borrow any equipment or tools from the facility.

Regular hours of building operations: 7:00am to 10pm daily.

5. WORK COORDINATION WITH BUILDING DAILY OPERATIONS

The Facility will operate normally and continue its programs to the public during construction. It is imperative that the operation and use of the building, as well as access and exits be maintained during construction. Contractor is required to plan all work in a way to not disrupt the regular operations of the buildings.

Contractor to ensure the work is performed in the shortest possible time.

Construction lay-down areas to be marked on a plan by the Contractor and approved by the Town and Consultant.

Should a system shut-down be required that disrupts the operations of the Facility, such task shall be identified ahead in the construction schedule and approved by the Town.

The Contractor is expected to include all provisions necessary to guarantee the comfort and safety of building users and the continuity of building operations/programs during the construction. The price for such provisions shall be included in the bid price.

Failure to keep occupied areas and Town's equipment and property free of dust, odours and debris will result in penalties to the Contractor.

In addition to the safety requirements of the Occupational Health and Safety Act, the Contractor shall be cognizant of how the work will affect the building users. The Contractor shall provide public advertising signs, delineate areas around work, indicate alternative paths for patrons, and make the construction area clearly defined/inaccessible, to help users understand and navigate the property during construction. Contractor shall plan for use of barricades, posts, fences and enclosures that are safe and secure. Any scaffold must be closed with solid plywood (first storey) and locked. All provisions must be effective in advertising/directing the public, to the Town's & local authorities satisfaction.

All parking and access to parking shall remain accessible to the building users except for the agreed staging area location.

Maintain all fire routes, building exiting and other life safety components of the building at all times. Adhere to the Ontario Ministry of Public Safety and Security's "*Guidelines for Maintaining Fire Safety During Construction in Existing Buildings.*"

The General Contractor must be able to meet the agreed schedule taking all the above into consideration without compromising the quality of work. The Contractor must apply advanced planning skills to conduct the construction within the time

frame given, to phase work as required, to coordinate sub-trades, and to accommodate changes for unforeseen building conditions, without impacting the completion date.

6. SITE EXAMINATION

Thoroughly examine the drawings, specifications and the site taking into consideration the existing conditions for a complete understanding of the scope of work. It is the responsibility of bidders to know the site. The Contractor will be held to have carefully examined all conditions affecting the site, the work to be done there on, including the location of all services which may have to be protected, removed or relocated. Bidders shall make their own estimates and measurements of the Facilities and difficulties that may be encountered. Submission of Tender shall be deemed confirmation that tenderer is thoroughly conversant with existing conditions and how they may affect the work. No claims for extras will be entertained for the execution of extra work, expense, or difficulties that were visible or reasonably inferable from an examination of the site prior to submitting a bid.

7. ROOF PROTECTION AND EXISTING STRUCTURE

Existing Structure:

Prior to completing ordering the equipment, the Contractor shall confirm the actual equipment weights to be installed (operating weights including all accessories and curb adaptors) and obtain approval from the Consultant. The mechanical drawings and specifications contain information about maximum allowed weights for all new equipment.

Roof Protection:

The roofs in both Facilities have been recently replaced. The Contractor shall take all necessary provisions to maintain roof warranties and ensure that the roof is not damaged or the structure overloaded during construction. Obtain and follow guidelines from the original roof installer to protect roof assembly during installation.

At a minimum, the Contractor is required to:

- Provide traffic protection with one layer insulation and one layer plywood covering all traffic areas, workers' path and work areas around the units. Workers shall not walk directly on the roof assembly.
- No equipment, tools or materials shall be stored on the roof or on the plywood protection at any time.
- No materials shall be stacked on the roof and no substances spilled.
- Roof top units, curbs, parts and equipment shall not rest on the roof at any point.

- Existing equipment shall be lifted and completely removed from the building before new equipment is placed, to avoid overstress on structure and damage to the roof assembly.

Prior to work start, a photographic record of the roof conditions will be generated by the Contractor, Owner and Consultant together and documented in a meeting minute.

Damages:

If during the installation it becomes apparent that the roof assembly was damaged as a result of the mechanical replacements, the Town will engage the original roofing contractors and a consultant to perform an inspection, confirm the integrity of the roof and recommend repairs. *The costs for inspection and repairs shall be paid by the Contractor of this tender.* Actual amounts paid by the Town to roofing contractors/consultants will be deducted from this contract.

Roof modifications:

The Contractor shall notify the Town in advance should a need arise for modifications to the roof assembly (for example, membrane overlap adjustment at curb). The Town will engage and bring the roofing contractors to perform the necessary modification. Costs for necessary modifications resulting from a project requirement (and not a damage) will be paid by the Town.

The following contractor is the original roof installer under which roof warranties are currently in place: Defaveri Group Inc.

8. SUPERVISION OF THE WORK

Read in conjunction with clause 3.32 of Section 3 – Supplemental Conditions.

To Clause GC 7.01.05.01, add: “The Contractor’s authorized representative shall be a qualified, competent and experienced Site Supervisor employed with the Contractor’s firm. Use of a sub-contractors’ staff as a Contractor’s representative will not be accepted. The Site Supervisor shall be on site at all times when work is taking place. The Site Supervisor shall be appointed by the Contractor at project start and shall be the same throughout the duration of the project. No staff substitutions shall be made without Owner’s approval. The Owner reserves the right to review the proposed Site Supervisor’s qualifications and reject unqualified staff for the project.

Clause GC 7.01.05.02 is not applicable to this project.

9. DEFICIENCIES

No payments will be done for partially completed work.

The Contractor shall rectify all deficiencies promptly. If there are deficiencies in any portions of the work, the work will be considered incomplete and therefore, will not be paid for, until all deficiencies have been addressed, to the satisfaction of the Town.

Failure to correct deficiencies promptly may be considered lack of performance and result in early termination of contract.

10. SHOP DRAWINGS AND SUBMISSIONS

Submit all shop drawings to Consultant for review no later than 4 weeks after notification of contract award.

Include shop drawing/sample submittal/approval timelines in the construction schedule. Coordinate shop drawing/sample process and allow for sufficient time for review, in order to not delay schedule.

A list of required shop drawings and maintenance manuals is included in Spec Section 01300 – Submittals.

Submit the final operating weights for roof top units including accessories and curb adaptors. The new weights shall be reviewed by the Consultant and approved prior to completion of the equipment ordering.

11. SEPARATE PRICE ITEMS

Separate Prices will be requested as described in the Development Program and Tender Price Schedule.

The tender will be awarded on the base bid price.

The Town may include Separate Price items in the contract at the time of the award or after contract start in a form of change order. The Town may choose not to include any Separate Price items in the Contract.

12. CASH ALLOWANCES

Cash Allowances have been included as part of the Contract Price.

The Contract price, and not the cash allowance, includes the Contractor's overhead and profit in connection with such cash allowances. No refund of overhead and profit will be expected on any unspent portion of Cash Allowances. Likewise, no overhead and profit will be allowed on total amount by which all Cash Allowances are exceeded.

Refer to Specifications Section 01020 "Allowances" for more details on payments against cash allowances.

13. ALTERNATIVE PRODUCTS, SUBSTITUTIONS

The tender price shall be based on the *specified* products and services.

If the Vendor is in a position to offer an equal or better proven method or product, he may submit/attach the information as a separate sheet at the bid submission, including associated cost extras or credits.

The tender award will be based on the specified products and services.

Proposed alternatives will be reviewed after award and may or may not be accepted.

For any alternative submission, Vendor must provide references to support his opinion that the proposed alternative product/method is equal or better than the specified, to the satisfaction of the Owner.

14. WARRANTIES

As part of the close-out documents, the Contractor shall provide a Warranty Letter for a period of 2 years from the date of Substantial Performance of the Work. Warranty Letter shall state the date of warranty commencement and expiry. Letter to describe services covered by the warranty. Include information of person to be contacted in case of operational issues.

The Contractor shall agree to repair or replace any work at no cost to the Owner within 48hours upon written notification from the Owner, within the warranty period.

Extended manufacturer's warranties shall also be included in the close-out documentation. Manufacturer's extended warranties shall be accompanied by a copy of the product order to facilitate a future claim by the Owner directly with the manufacturer after the general contractor's warranty has expired.

15. CLOSE OUT DOCUMENTS, OPERATION & MAINTENANCE MANUALS

The Contractor will turn over to the Owner at the completion of the contract, and prior to final payment application, 2 binders with copies of the project close out documents.

The close-out documents are part of the work. The work will not be considered complete until close-out documents have been submitted, reviewed by the Town/Consultant and approved.

Refer to Consultant's specifications for specific submission requirements and include all section specific documentation in the close-out binders.

The close-out binders shall include:

- Table of contents
- Contractor's contact information including phone number for warranty repairs
- Contact list for all subcontractors and suppliers associated with the project
- Contractor's 2 year general Warranty Letter
- Manufacturer's extended warranties accompanied by product specific purchase order
- Copy of the Substantial Performance Certificate issued by the Consultant, a copy of the publication or a copy of the Declaration of Last Supply, whichever is applicable.
- Shop drawings
- Operations, Maintenance and Care manuals
- As-built drawings produced by the Contractor. As-builts shall include all changes to the project and any site variations.

Provide extra stock of materials as specified. Collect and organize spare parts, tools and loose accessories as applicable to materials and equipment. Label all extra stock and present to Owner prior to project hand-over.

Section No. 5

List of Drawings

List of Drawings

ARCHITECTURAL

- A0.1 Drawing List, Key Map, O.B.C. Matrix, and Project Sign
- A0.2 Life Safety Plan
- A2.0 Ground Floor Plan - Existing
- D2.1 Ground Floor Plan - Demolition
- A2.1 Ground Floor Plan - Proposed
- A3.1 Elevations
- A4.1 Wall Sections
- A4.2 Details
- A6.0 Ground Floor – Reflected Ceiling Plan – Existing and Demolition
- A6.1 Ground Floor – Reflected Ceiling Plan - Proposed
- A7.1 Ground Floor – Washroom Enlarged Plan and Elevations
- A8.1 Door Type Schedule
- A8.2 Door and Window Framing Details
- A9.1 Ground Floor – Finish and Millwork Plan
- A9.2 Millwork Sections and Details

MECHANICAL

- M0.1 Legend, abbreviations, Drawing List
- M0.2 Mechanical Specifications
- M0.3 Mechanical Specifications
- M1.1 Demolition Plan – Mechanical
- M1.2 Ground Floor Plans – Mechanical
- M1.3 Roof Plan - Mechanical
- M2.1 Details and Diagrams
- M2.2 Schedules

ELECTRICAL

- E0.1 Legend, Notes, Schedules, Drawing List
- E0.2 Electrical Specifications, Lighting Control Narrative
- E1.1 Ground Floor Plan – Demolition - Electrical
- E2.1 Ground Floor Plan - Lighting
- E2.2 Ground Floor Plan – Power, Systems



SPECIFICATIONS

for

Milton Innovation Centre
555 Industrial Drive, Milton, Ontario
Interior and Exterior Renovations
Milton, Ontario

for the
Town of Milton

+VG ARCHITECTS
The Ventin Group Limited
50 Dalhousie Street
Brantford, Ontario N3T 2H8
T: (519) 754-1652

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END OF SECTION

ARCHITECTURAL

- A0.1 Drawing List, Key Map, O.B.C. Matrix, and Project Sign
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- E2.2 Ground Floor Plan – Power, Systems

End of Section

1. **GENERAL**

1. Unless specified otherwise, the following instructions shall apply to all sections of the work.
2. Conform to The latest Ontario Building Code, CEC CSA C22, CAN3-B44 and CSA W59.1 - latest amendments, where applicable, to the Canadian Code for Construction Safety, as currently amended, and to the Construction Safety Act, Ont. as currently amended, and to all other applicable codes and Building By-Laws hereinafter referred to as Codes; and to the requirements of the authorities having jurisdiction, including public utilities, referred to in the Contract Documents as the authorities.
3. Conform to regulations of Municipality having jurisdiction regarding clean up of tracking on streets and protection of sidewalks and curbs, and all other applicable laws, By-laws and Regulations.
4. Read General Work - Section 01015, for instructions and requirements regarding General Work and Services, Miscellaneous Work and Services and Temporary Work and Services. Trades requiring own offices, sheds, etc. shall provide, maintain, relocate and remove same in a manner satisfactory to Contractor.
5. In all cases where a device or part of the equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation.
6. Definitions
 1. Wherever the words 'approved', 'satisfactory', 'directed', 'permitted', 'inspected', 'instructed', 'required', 'submit', 'ordered', or similar words or phrases are used in the Contract Documents, it shall be understood, unless the context provides otherwise, that the words 'by (to) the Architect/Owner' follow.
 2. 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', 'by Owner', or by another Contractor.
 3. Exposed: means when visible by the occupants at completion of the work, unless scheduled or specified otherwise.
 4. The use of scope, related work, or similar articles in the specifications shall not relieve the contractor from their responsibility to assign the various parts of the work to the appropriate subcontractors and forces and shall not impose upon the Architect or Owner the duty to arbitrate disputes between the Contractor and the Subcontractor, nor shall it relieve the subcontractors from their responsibility for carefully examining all the Drawings and Specifications and coordinating their work with each other and the Contractor.

2. CO-OPERATION

1. Co-operate and co-ordinate with other trades as required, for satisfactory and expeditious completion of work. Take field dimensions relative to work. Fabricate and erect work to suit field dimensions and field conditions. Provide forms, templates, anchors, sleeves, inserts and accessories required to be fixed to, or inserted in work, and set in place or instruct related trades as to their location. Pay cost of extra work caused by and make up time lost, as a result of failure to provide in adequate time, the necessary co-operative information of items to be fixed to, or built in.

3. MATERIALS

1. Reject material damaged in transit. Store packaged materials in original undamaged containers with manufacturer's labels and seals intact. Handle and store materials in accordance with manufacturers' and suppliers' recommendations. Prevent damage. Remove from site and replace damaged materials.

4. EXAMINATION

1. The Contractor affirms that before tendering, they did examine the site and ascertain the extent and nature of all conditions affecting the performance of the work including the existing conditions. No extras will be allowed for anything which would have been revealed in the course of such an examination.
2. The Contractor affirms that before tendering they did examine the Specifications, Drawings, and other tender documents thoroughly. It shall be assumed that the Contractor thoroughly understands these documents, including those particular items about which questions have been asked and written instructions given.
3. Examine work upon which your work depends. Application of your work or any part of it shall be deemed acceptance of work upon which your work, or that part of it which has been applied, depends.
4. Drawings are in part, diagrammatic and incomplete, and are intended to convey scope of work and indicate general and approximate location, arrangement and size of fixtures, equipment, ducts, piping, conduit and outlets. Obtain more accurate information about locations, arrangement and sizes, from study and coordination of construction drawings, including architectural, structural, mechanical and electrical and become familiar with conditions and spaces affecting these matters before proceeding with work.
5. Where job conditions require reasonable changes in indicated location and arrangements, make changes at no extra cost to Owner. Install and arrange ducts, piping, conduit, equipment and fixtures in such a way as to conserve head room and space as much as possible.

5. **SCAFFOLDING**

1. The Contractor shall provide at their own expense all manner of materials, labour, scaffolding, ladders, hand tools, and appliances necessary for the due execution and proper completion of work described herein, unless otherwise specified in tender specifications.
2. Erect scaffolding independent of walls. Use scaffolding so as to interfere as little as possible with other trades. When not in use, move scaffolding as necessary to permit installation of other work. Construct and maintain scaffolding in rigid, secure and safe manner. Remove scaffolding promptly when no longer required. Scaffolding must comply to Occupational Health and Safety Act.

6. **ROOF SURFACES**

1. Adequately protect existing roof finishes from damage during construction.
2. Provide traffic protection covering all traffic areas, worker's path and work areas around units. Workers shall not walk directly on the roof assembly.
3. No equipment, tools or materials shall be stored on the roof or on the protection surfaces at any time.
4. Roof top units , curbs, parts and equipment shall not rest on the roof at any time.
5. Existing equipment shall be lifted and completely removed from the building before new equipment is placed, to avoid overstress on structure and damage to roof assembly.
6. Keep roof free of oils, grease, sharp objects or other material likely to damage them, discolour them, or affect warranty of applied materials & finishes.
7. These requirements to be applied in conjunction with Item 7 "Roof Protection and Existing Structure" in Section 4 – Special Provisions.

7. **RESERVED**

8. **CLEANING AND CONTRACT CLOSE-OUT**

1. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
2. Store volatile wastes in covered metal containers, and remove from premises daily.
3. Prevent accumulation of wastes which create hazardous conditions.

4. Provide adequate ventilation during use of volatile or noxious substances.
5. Use only cleaning materials recommended by manufacturer on surface to be cleaned, and as recommended by cleaning material manufacturer.
6. Cleaning During Construction
 1. The successful Contractor will be responsible to maintain the work areas and designated storage areas in a neat, orderly and clean condition and remove all excess materials and/or garbage from the site, daily.
 2. Provide on-site containers for collection of waste materials and rubbish. Location to be co-ordinated with Architect/Owner.
 3. Remove waste materials and rubbish from site on an ongoing basis.
 4. Clean interior building work areas daily or as needed, until work is complete
 5. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
 6. Promptly as the work proceeds and on completion, each Contractor shall clean up and remove from the premises all rubbish, surplus materials and equipment resulting from their work. Follow General Contractors instructions regarding disposal of rubbish.
 7. Before final inspection, replace items that have been broken, damaged and/or etched during construction, or which are otherwise defective.
 8. Include in Work final cleaning by skilled cleaning specialists on completion of construction.
 9. Remove temporary protections and make good defects before commencement of final cleaning.
 10. Remove dust, stains, paint spots, soil, grease, fingerprints and accumulations of construction materials. Perform cleaning in accordance with installer's instructions for each material.
9. EXISTING SERVICES
 1. Where unknown services are encountered, immediately advise Architect /Owner and confirm findings in writing.
10. WORK PLACE SAFETY
 1. The General Contractor will be responsible for submitting their safety program used in the ongoing operation of their company and any safety recommendations specifically relating to the tendered project.

2. Submit copies of all Safety Meeting Minutes to Architect and Owner.

12. SITE

1. The work to be done at 555 Industrial Drive, Milton, Ontario.

13. PROCEDURES AND SUPPLY OF CRITICAL MATERIALS

1. Submission of a tender shall constitute the Tenderer's agreement that they will commence work immediately upon award of the Contract, and that they will execute the same without interruption until completion, including the furnishing of all necessary supplies. Contractor shall assure themselves before submitting a tender that they are in a position to furnish adequate supplies of all materials, critical or otherwise, at such times necessary to ensure immediate commencement of the work and continuous operation without delays on the project. The Contractor shall include in their tender amount, sufficient sums for the purchase of critical materials from any source available. After award of the contract, the Owner will not grant increases to the tender amount to obtain critical materials at premium prices, nor will delays or interruption of the work be tolerated.

14. SITE ACCESS

1. Contractor to remove all debris from site daily.
2. Location of all trailers, storage units, and construction fences by contractor shall be reviewed and approved by the Owner and Architect at a preliminary site meeting prior to contractor moving on to site.
3. Parking for construction workers shall be on site as directed by the General Contractor, only when parking spaces are available.
4. Site access for construction to be confirmed at first site meeting.

15. CONSTRUCTION SAFETY

1. Safety measures or procedures taken by the Contractor, i.e. site safety meetings, protective hoarding etc. will not relieve the contractor of their responsibilities for the safety of persons and property, and for compliance with the federal, provincial and local statues, rules, regulations and orders applicable to the conduct of the work.
2. This Contractor shall be liable for any costs, fines, penalties, etc. levelled against the Owner or Consultant due to violation of the Construction Safety Act by this Contractor or any Subcontractors on this project.
3. NOTE: The existing building must be able to maintain regular exiting operations during the entire construction period. Refer to "Work Coordination with Building Daily Operations" in Section 4 - Special Provisions.

16. PROJECT SCHEDULE

1. Refer to Sections 2, 3 and 4 of the Tender Documents, for project schedule requirements.

17. PROTECTION AND MAKING GOOD

1. Protect existing property, adjacent public and private property and work of other sections from damage while doing work.
2. Damaged work and property shall be made good wherever possible by those performing work originally, but at expense of those causing damage. The General Contractor is solely responsible for all subtrades and any damage.
3. Attach and fasten fixtures and fittings in place in safe, sturdy secure manner so that they cannot work loose or fall or shift out of position during occupancy of building as a result of vibration or other causes in normal use of building.
4. If, during performance of the work, any buildings, curbs, walks, roads or landscaping are damaged, repair or replace them to the satisfaction of Architect/Owner and the local jurisdiction at no additional cost to the Owner.

18. MATERIALS AND EQUIPMENT

1. All materials and equipment supplied for the work shall be new, of the best quality, and in accordance with the latest applicable specifications of the Canadian Standards Association.
2. The particular method, material, procedure or equipment specified in this tender shall be used as a standard.
3. M.S.P.S. (Material Safety Data Sheets) for all materials being used on this project are to be kept on site and made available for use by all concerned.
4. Controlled substances: the use of any controlled substance of any kind must be reviewed by Owner and written acceptance of its use obtained.
5. During and upon completion of the work, the Contractor shall remove from the premises all surplus materials, equipment and debris.

19. GENERAL NOTES TO CONTRACTOR

1. The contractor will be required to keep and maintain a set of as-built drawings/information for this project. These drawings will be used for no other purpose than recording all changes to the contract documents. The as-built drawings/information will be submitted to the Architect/Owner along with guarantees, maintenance data, extra supplies, etc. at the completion of the contract.

2. The contractor will turn over to the Architect/Owner at the completion of the contract all project close out documents, material, etc. These documents, material, etc., will be accepted only with a transmittal and at no other time than when submitting a written request for substantial performance of the contract. For purposes of determining a value of this work it will be considered as **\$1,000**.
3. The contractor is not to act on verbal instruction from the Owner, Consultants, or Architect on work they consider to be extra to their contract scope. Extra work can only be authorized by the Architect/Owner and in a written form only. The written form must also include that this work is an extra to the contract scope, and the method by which extra costs will be tabulated.
4. Ensure the building is maintained weather tight, safe and secure. Furnish all temporary protection as may be required.
5. Remove and dispose of all resultant debris.
6. Work shall be done in accordance with best standard practice, unless special methods or performance standards are specified or given in writing by the Owner. Only skilled mechanics shall be used where such are required to produce a first class job.
7. Use, install and handle manufactured materials in accordance with manufacturer's instructions.
8. Conform to the latest Ontario Building Code, CEC CSA C22, (latest Edition as currently amended) CAN3-B44, and CSA W59.1, where applicable, to the Canadian Code for Construction Safety, as currently amended, and to the Construction Safety Act, Ont. as currently amended, and to all other applicable codes and Building By-Laws hereinafter referred to as Codes; and to the requirements of the authorities having jurisdiction, referred to in the Contract Documents as the authorities.
9. Conform to regulations of Municipality having jurisdiction regarding clean-up of tracking on streets and protection of sidewalks and curbs, and all other applicable laws, By-laws and Regulations.
10. Any work not acceptable to the Architect or Owner or local authorities shall be removed and replaced when and as directed by them. The cost of re-executing such work shall be borne by the Contractor.
11. Any work to be completed must be co-ordinated by the General Contractor with the Owner facilities Staff.
13. The contractor shall have internet service on the jobsite for transfer of documents and drawings and shall maintain this service until the date of substantial completion of the contract.

14. The contractor shall maintain access to the buildings and portable buildings on site and shall restrict access to construction areas.

END OF SECTION

1. EXAMINATION

1. Throughout the project, examine the work of all trades and promptly notify the Architect/Owner if any conditions do not or will not comply with the drawings and specifications.

2. PROTECTION

1. Conform to Ontario Building Code, latest amendments, and The Construction Health and Safety Act, all as currently amended.
2. Provide spare safety helmets for and enforce their use by Owner, Architect, their representatives and any authorized visitors to site.
3. Provide and maintain in working order, adequate, temporary Canadian Underwriters labelled, chemical solution (soda acid) Class A.1, fire extinguishers and locate in prominent positions to approval of authorities having jurisdiction.

3. WASHROOM CONVENIENCES

1. General Contractor to provide washroom facilities as per the Construction Health and Safety Act for use of subcontractors and employees. Facilities shall be provided and contents shall be removed regularly during construction. Maintain it without offense to neighbourhood. At completion of building, washroom facilities and contents shall be removed and the ground carefully levelled and cleared. Employees on work must avail themselves of this convenience. It shall be to the satisfaction of local Health Authority.
2. Use of permanent toilets is forbidden.

4. TEMPORARY TELEPHONE

1. The General Contractor shall provide and pay for a private telephone until their work is complete.

5. TEMPORARY ELECTRICAL SERVICE

1. The General Contractor may use one site power necessary to the operations under this contract.

6. DELIVERY AND STORAGE OF MATERIALS

1. Arrange for early deliveries necessary for execution of work without delay and have materials on job well in advance of the time it is needed.
2. Deliver, store and handle materials to exclude foreign material and prevent damage, soiling or breakage.
3. Materials to be stored on site, which need to be protected from weather shall be so protected.
4. Packaged materials shall be delivered in packages with manufacturer's seals and all labels intact.

7. OWNERSHIP OF MATERIALS

1. All work or material delivered on the site or premises to form part of the works shall be considered the property of the Owner and shall not be removed without the consent of the Architect/Owner, but the Contractor shall have the right to and shall remove the surplus materials after he has completed the work. If so directed by the Architect/Owner, such surplus materials shall be removed at any time prior to the completion of the work.
2. All materials which are to be removed from the existing site and are not called for to be re-used or specifically called for in the specifications to be turned over to the Owner, shall become the property of the General Contractor and shall be removed from the site.

8. DETAILS AND MEASUREMENTS

1. Ensure that necessary job dimensions are taken, and trades are coordinated for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions, and for co-ordination.
2. Verify that work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent work, as set out by requirements of the drawings, and ensure that work installed in error is rectified before construction continues.
3. Check and verify dimensions referring to work. Dimensions, when pertaining to work of other trades, shall be verified with trade concerned.
4. Do not scale directly from the drawings. If there is ambiguity or lack of information, immediately inform the Consultant and await his instructions before proceeding. Be fully responsible for rectifying, altering or redoing any work resulting from disregarding this clause.
5. All details and measurements of any work which is to fit or to conform with work installed shall be taken at the site.
6. Should revised drawings be issued after work has commenced, Contractor shall immediately return to Architect/Owner previous drawings which refer to said work. The Contractor will be held responsible for work being carried out in accordance with said revised drawings.

9. WORKMANSHIP

1. Work shall be done in accordance with best standard practice. Only skilled mechanics shall be used where such are required to produce a first-class job.
2. Use, install and handle manufactured materials, equipment and appliances in strict accordance with manufacturer's directions and instructions, unless specified otherwise.

10. FIRE PROTECTION AND ACCESS TO EQUIPMENT AND EXITS

1. Take necessary precautions to eliminate fire hazards and to prevent damage to work, equipment and other property both public and private having to do with the work. Inspect work of this contract at least once a week for this purpose.
2. Provide and maintain in working order suitable Underwriters' labelled fire extinguishers and locate in prominent positions, to approval of authorities.
3. When performing any operation with an open flame, a portable fire extinguisher shall be kept within 10 feet (3000 mm) of the operator at all times.
4. Store and locate materials and equipment packed in cardboard cartons, wood crates and other combustible containers in orderly and accessible manner. Place approved types of firefighting equipment in vicinity of materials or equipment packed in this type of crate or carton until permanent fire protection and equipment are available.
5. Store all rags and waste containing oil, grease or other flammable materials in an approved metal container and remove from the site at the end of each working day.
6. Only fire-resistant tarpaulins are permitted on site.
7. Provide and maintain free access at all times from the street to fire hydrants and to outside connections for standpipes or other fire extinguishing equipment whether permanent or temporary. Do not place material or construction equipment within 10 feet (3 m) of hydrants or connection, nor between them and centre line of the street.

Maintain free access at all times to control valves and hose on fire lines within building and to all portable extinguishers.

11. SAFETY

1. Take all precautions necessary to protect and safeguard workers from dangerous conditions hazardous to health.
2. Comply with requirements of Safety Requirements.

12. NOTES TO GENERAL CONTRACTOR

1. Ensure that the building is maintained weathertight and secure. The General Contractor shall furnish all temporary protection, enclosures, tarpaulins, etc., as may be required to weatherproof openings in the work.
2. The General Contractor shall carry out all removal and disposal of all resultant debris.
3. In case of damage to active services, notify Architect/Owner, Utilities and authorities immediately and make all required repairs under direction of

appropriate utility. Carry out repairs during off hours if required. In absence of specific requirements or direction, plug or cap unused or abandoned utility lines at least 3 feet (1000 mm) outside of new building walls, or as required by utilities, codes and authorities.

4. The location of construction shacks and trailers to be approved by the Architect and Owner.
5. Take all precautions necessary to protect and safeguard workers from dangerous conditions and products that may be present during the construction that are hazardous to health.
6. Restore disturbed areas to original condition unless shown otherwise on drawings or stated in specifications.

13. CONSTRUCTION PARKING

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

14. PROTECTION FOR OFF-SITE & PUBLIC PROPERTY

1. Protect surrounding private and public property from damage during performance of work.
2. Be responsible for damage incurred.

15. SIGN AND ADVERTISEMENTS

1. Erect no other signs, except those signs which are necessary to give direction or for safety, or warning signs, without the Architect's/Owner's permission. Where other signs are required or wanted, obtain Architect's/Owner's approval.

16. PROTECTION OF BUILDING FINISHES & EQUIPMENT

1. Provide protection for finished and partially finished building finishes and equipment during performance of work.
2. Provide necessary screens, covers, hoardings as required.
3. Be responsible for damage incurred due to lack of or improper protection. Replace or repair finishes or equipment so damaged.

17. SECURITY

1. When work at site has progressed as to become attractive for vandalism or theft, engage a recognized security guard agency to provide security service at times when tradesmen are not present in substantial numbers. Continue service until after time of Substantial Performance and the Owner has taken over the use of the site.
2. Extent of security services shall be at the discretion of the Contractor. Materials, products, finishes, etc. damaged due to vandalism are to be restored and/or

replaced to an as-new condition.

End of Section

1. CASH ALLOWANCES

1. Refer to the "Tender Schedule of Prices" for a list of Cash Allowances to be included in the Contract Price. These allowances shall be expended in whole or in part, when authorized by the Architect in writing. The unused portion of the Allowances shall be credited to the Owner.

2. The Contract Price and not the cash allowance, includes the Contractor's overhead and profit in connection with such cash allowance.

No refund of overhead and profit will be expected on any unspent portion of Cash Allowances. Likewise, no overhead and profit will be allowed on total amount by which all Cash Allowances are exceeded.

3. Expend cash allowance as directed by the Consultant in writing. Allowance will be adjusted to actual cost but no adjustment will be made to Contractor's charges including overhead and profit which are included in the Contract Price.

4. Cash allowances are designed for work and services deemed to be necessary by the Owner, from time to time, throughout the execution of the Work. Where a cash allowance refers to an item or category of work already included in the Contract Documents, it shall be assumed to cover work or services in addition to that included, unless specifically indicated otherwise.

5. Contractor may be required from time to time, to assist in tendering of certain items of work or services covered by allowance, as directed by Consultant.

6. Material Supply Items:

1. Scope for material supply items covered by Cash Allowance includes:

1. Net cost of material.
2. Applicable taxes and duties.
3. Delivery to site.

2. In addition to above scope covered by Cash Allowance include in Contract Price costs for:

1. Handling at site, including unloading, uncrating, storage and hoisting.
2. Protection from elements, from damage.
3. Labour, installation and finishing.
4. Other expenses required to do cash allowance work (i.e. contract co-ordination).
5. Overhead and Profit.

7. Material and Installation Items:

1. Scope of each material and installation item covered by Cash Allowance includes:

1. Net cost of material.

2. Applicable taxes and duties.
 3. Delivery to site.
 4. Handling at site, including unloading, uncrating, storage and hoisting.
 5. Labour, installation and finishing.
2. In addition to above scope covered by Cash Allowance include in Contract Price costs for:
1. Protection from elements, from damage.
 2. Overhead and Profit.
 3. Other expenses required to do cash allowance work (i.e. contract co-ordination).
8. Inspection and Testing Work:
1. Scope for inspecting and testing covered by Cash Allowance includes:
 1. Net cost of testing laboratory services and field inspection.
 2. In addition to above scope covered by Cash Allowance include in Contract Prices for:
 1. Overhead and Profit.
 2. Supply of material tested, patching and completion of work tested.
 3. Other testing on re-testing work specified in Section 01400.
 4. Other expenses required to do cash allowance work (i.e. contract co-ordination).
9. Progress payments on accounts of work authorized under cash allowances shall be included in the Consultant's monthly certificate for payment. Copies of invoices are to be submitted to substantiate claims.

END OF SECTION

1. **GENERAL**

1. **REQUIREMENTS INCLUDED**

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

2. **SUBMITTALS**

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

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

2. Include in request:

1. Identification of Project.
2. Location and description of affected work.
3. Statement on necessity for cutting or alteration.
4. Description of proposed work, and products to be used.
5. Alternatives to cutting and patching.
6. Written permission of affected separate contractor.
7. Date and time work will be executed.

3. **GENERAL**

1. Execute cutting, fitting, and patching, to complete the Work.
2. Fit the several parts together, to integrate with other work.
3. Uncover work to install ill-timed work.
4. Remove and replace defective and non-conforming work.

4. **INSPECTION**

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

2. After uncovering, inspect conditions affecting performance of work.
3. Beginning of cutting or patching means acceptance of existing conditions.
5. PREPARATION
 1. Provide supports to assure structural integrity of surroundings; devices and methods to protect other portions of project from damage.
 2. Provide protection from elements for areas which may be exposed by uncovering work.
6. PERFORMANCE
 1. Execute work by methods to avoid damage to other work, and which will provide proper surfaces to receive patching and finishing.
 2. Use material to match existing.
 3. For a change in material submit request for substitution.
 4. Employ qualified trade contractor to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight exposed surfaces.
 5. Pneumatic or impact tools not allowed without prior approval.
 6. Restore work with new products in accordance with requirements of Contract Documents.
 7. Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection.

End of Section

1. GENERAL

1.1 ACCESS AND EGRESS

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

1.2 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Consultant and Owner to facilitate work as stated.

.2 Maintain existing services to building and provide for personnel and vehicle access.

.3 Where security is reduced by work provide temporary means to maintain security.

.4 Contractor will assign sanitary facilities for use by Contractor's personnel. Keep facilities clean.

.5 Closures: protect work temporarily until permanent enclosures are completed.

1.3 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

.1 Execute work with least possible interference or disturbance to building operations, occupants, public and normal use of premises. Arrange with Consultant/Owner to facilitate execution of work.

1.4 EXISTING SERVICES

.1 Notify Consultant and utility companies of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give Consultant 96 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.

- .3 Construct barriers in accordance with Section 01560 - Temporary Barriers and Enclosures.

1.5 SPECIAL REQUIREMENTS

- .1 Carry out noise generating Work in accordance with Town of Milton By-Laws.
- .2 Submit schedule in accordance with Section 01310 – Construction Schedule - Critical Path Method (CPM).
- .3 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .4 Keep within limits of work and avenues of ingress and egress.

1.6 SECURITY CLEARANCES

- .1 Personnel employed for certain aspects of this project may be subject to security check. Obtain clearance, as instructed, for each individual requested.
- .2 Co-Operate with personnel in meeting with the security requirements set out for this project by them and defined during the construction phase.

1.7 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is permitted only in the area designated and never within buildings once any wall, partition, steel deck or roof is installed.

END OF SECTION

1. SHOP DRAWINGS

1. Submit shop drawings electronically to Architect as required in various sections of these specifications and on the drawings.
2. Review submittals prior to submission. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated by the General Contractor and identified as to specific project will be returned without being examined and considered rejected.
3. Notify, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
4. Verify field measurements and affected adjacent Work are coordinated.
5. Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.
6. Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
7. Keep one reviewed copy of each submission on site.

2. LIST OF SHOP DRAWINGS

1. Submit Shop Drawings as specified in the following Sections:

<u>Section</u>	<u>Title</u>
05500	Miscellaneous Metals
06400	Architectural Woodwork
06650	Solid Surface Fabrications
07465	Preformed Metal Siding
07620	Sheet Metal Flashing and Trim
07900	Sealants
08110	Hollow Metal Doors, Frames & Screens
08400	Aluminum Entrance Doors, Frames & Screens
08700	Finish Hardware
08800	Glass and Glazing
09110	Metal Stud and Ceiling
09300	Porcelain and Ceramic Tile
09500	Acoustic Treatment
09650	Resilient Flooring

09655	Sheet Flooring & Linoleum
09900	Painting & Finishing
10800	Washroom Accessories

3. MAINTENANCE MANUALS

<u>Section</u>	<u>Title</u>
09650	Resilient Flooring
09655	Sheet Flooring & Linoleum
10800	Washroom Accessories

1. **GENERAL**

1. **GENERAL**

1. This section details General Contractor's responsibilities in preparation, submission and maintenance of construction schedules with form and requirements for periodic revisions. The Sub-Contractors shall provide the General Contractor with their schedule of work and co-ordinate the work with General Contractor and the Work Progress of other trades on site.

2. **REQUIREMENTS INCLUDE**

1. Schedule, form, content.
2. Stages/Phased Construction.
3. Schedule Revisions.
4. Weekly schedule updating.

3. **RELATED REQUIREMENTS**

1. Section 01700 - Contract Closeout.

4. **SCHEDULES REQUIRED**

1. Submit the following schedules:
 1. Construction Progress Schedule.
 2. Weekly Schedule and Manpower Loading.
 3. Submittal Schedule for Shop Drawings and Product Data and Shades.
 4. Product Delivery Schedule. Include required decision dates for finishes and colours.
 5. Sub-schedule showing submittals, review times, procurement schedules, and delivery dates.
 6. Sub-schedules to define critical portions of overall schedule.

5. **FORMS OF SCHEDULES**

1. Prepare schedules in form of horizontal bar chart (GANn, or C.P.M. network. Provide separate horizontal bar column for each trade or operation, or separate activity for each operation that can be

completed independently of other operations or trades. Provide as follows:

1. Order: Chronological order of beginning of each item of work.
2. Identification: Identify each column by distinct graphic delineation.
3. Horizontal Time Scale: Identify first work day of each week.
4. Scale and Spacing: To allow space for updating.
5. Minimum Sheet Size: 11" x 17" for electronic submission.

6. SUBMITTALS SCHEDULE

1. Include schedule for submitting shop drawings, product data, and samples. Co-ordinate with section 01300 requirements. Incorporate into Preliminary Progress Schedule and Weekly Schedule updates.
2. Indicate dates for submitting, review time, resubmission time, float time, and last date for meeting fabrication schedule.
3. Include dates when SUBMITTALS and delivery will be required for the Owner-furnished products if applicable.
4. Include dates when reviewed submittals will be required from the Consultant.

7. PRODUCT DELIVERY SCHEDULE

1. Include dates for delivery of products specified in Section 01020 - Allowances, if applicable.
2. Include dates for products furnished by Owner, if applicable.
3. Submit a schedule of required equipment order dates and delivery dates for products and/or assemblies which involve insignificant production time or fabrication time and/or will significantly affect the project schedule if not available when needed.

8. CONSTRUCTION PROGRESS SCHEDULE

1. Submit a preliminary construction schedule and phasing plan for approval.
2. Incorporate approved preliminary schedule in the construction schedule of the project.

3. Submit a bar-chart progress schedule a minimum of seven (7) days before first progress application for payment. Prepare schedule with sufficient detail to indicate timing of major activities during phased progress of the Work and which will ensure completion of the Work on or before schedule.
4. On schedule indicate a time bar for each major construction activity to be performed at the site, properly sequenced and co-ordinate with other activities of work. Itemize activities in sufficient detail that no one bar exceeds two months in duration. Allow sufficient space below planned time bar for another time bar to record actual progress.
5. Show dates for commencement and completion of all activities. Estimate duration period and float (contingency) time for each activity.
6. Show projected percentage of completion for each activity as of the date of submission of monthly progress payment applications and/or to the date of submission of schedule when requested.
7. Indicate actual progress of each activity to date of submission of schedule. Indicate current status of all activities to date of submissions of schedule by showing where behind, on or ahead of planned schedule.
8. Show changes occurring since previous submission of schedules:
 1. Major changes to scope
 2. Activities modified since previous submission
 3. Revised projections of progress and completion
 4. Other identifiable changes.
9. Confirm commencement, duration and completion dates of all activities with subcontractors, subtrades and suppliers.
10. Deliver to Architect, at the end of each calendar month with progress application a project status report derived from evaluation of Schedule.
11. Include in this report updated schedule together with such supporting narrative and such graphical presentations necessary to clearly outline the progress of Work, areas of current and anticipated problems, effect of changes on schedules of major trade subcontractors and proposed corrective action.
12. Be aware that the nature and day-to-day functioning of the Owner will have precedence over any phasing and arranged schedule, and

stoppage of the work with good reason, and changes to the schedule may be made by the Owner on an as needed basis without prior notice and at no extra cost to the contract. The Contractor shall take this into account, and shall co-ordinate and co-operate with the Owner and reschedule the work to accommodate the Owner's requirements.

13. Lengthy shutdowns and disruptions of services will not be tolerated, and strict attention shall be paid to minimizing any disruption.
14. Schedule required work in occupied areas in co-ordination with the Owner and such schedule be approved by the Owner prior to start of the work. Provide two weeks minimum notice when work in existing area is required

9. STAGED/PHASE CONSTRUCTION

1. Prepare and submit sub-schedules for each separate stage of Work when pertinent to the project.
2. Provide sub-schedules to define critical portions of prime concern to master schedule.
3. Describe start and stop, float time and affected other work.

10. WEEKLY SCHEDULE UPDATE AND MANPOWER LOADING

1. Use the Construction Progress Schedule as a basis for reporting on a weekly basis the complete status of construction progress, scheduled activities and manpower loading on the project.
2. There will be an Owner/Architect/Consultant/General Contractor/Trade Contractor meeting every second week to review the project status. Provide a detailed 2 week work schedule (based upon the Construction Progress Schedule) outlining work activities and manpower requirements planned for that period.
3. Identify current and anticipated problems and delays with respect to the past work period the effects of said problems on the overall schedule and proposed corrective measures.
4. Submit to Architect two days prior to site meetings (every second week) the following:
 1. Updated Construction Progress Schedule.
 2. Outline of anticipated work activities for the forthcoming period.
 3. Outline of required and/or anticipated manpower levels (by

trade) for the forthcoming period.

4. Problems or delays experienced and/or anticipated.
5. Proposed corrective measures to react to problems or delays.

END OF SECTION

1. APPROVAL REQUIRED

1. The Contract is based on the materials, equipment, and methods described in the Contract Documents. Product substitutions will not be considered during the Tender period.
2. The Architect will consider proposals for substitution of materials, equipment, and methods only after the award of Tender and when such proposals are accompanied by full and complete technical data and all other information required by the Architect to evaluate the proposed substitution.
3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the Architect, in writing.

2. ACCEPTABLE PRODUCTS

1. First item named or specified by catalogue number meets specifications in all respects regarding performance, quality of material and workmanship, and is acceptable to the Architect.
2. Items, other than first named, meeting specifications regarding quality of materials and workmanship only, are acceptable to the Architect, if they also meet performance, match the first named product in colour and texture, etc. and/or capacities specified and can be accommodated within the space allotted.
3. General approval indicated by inclusion of other manufacturers named is subject to final review of submitted samples of shop drawings, performance data and test reports.
4. Where the contractor uses equivalent products other than that first named, on which design is based, the contractor shall be responsible for all details of installation including product size, arrangement, fit, colour, etc. and maintenance of all required clearances. Contractor shall prepare and submit revised layouts to indicate arrangement of all affected piping, ductwork, conduit, lighting, equipment, etc. Failure by Contractor to provide such drawings may be considered indication that additional costs associated with equivalent products such as revisions to surrounding architectural finishes, structural components, or the need for larger motor starters, larger power feeders, space revisions to associated product equipment, controls, etc. shall be included in Bid price.

3. "OR EQUAL"

1. Where the phrase "or equal", "approved equal", or "equal as approved by the Architect" occurs in the Contract Documents, do not assume that materials, equipment, or methods will be approved by the Architect.
2. The decision of the Architect shall be final.

4. AVAILABILITY OF SPECIFIED ITEMS

1. Verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the work.
2. In the event specified items will not be so available, notify the Architect prior to receipt of bids.
3. Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, will be back-charged as necessary and shall not be borne by the Owner.

END OF SECTION

1. **GENERAL**

1. **REQUIREMENTS INCLUDED**

1. Safety measures
2. Fire protection
3. Overloading precautions
4. Falsework
5. Scaffolding

2. **CONSTRUCTION SAFETY MEASURES**

1. Observe and enforce construction safety measures required by National Building Code (Part 8) and Ontario Building Code (latest edition as currently amended), Provincial Government, Workplace Safety & Insurance Board and municipal statues and authorities.
2. In particular, the Ontario Construction Safety Act, the regulations of the Ontario Department of Labour and Ontario Hydro Safety Requirements shall be strictly enforced.
3. In the event of conflict between any provisions of above authorities the most stringent provisions will apply.

3. **MATERIAL SAFETY DATA SHEETS**

1. Submit Material Safety Data Sheets (MSDS) for any product to be used, installed or applied inside of the building if said product may emit toxic fumes and/or noxious odours.
2. Submit Material Safety Data Sheets for any product which is known to or suspected of creating a health hazard or discomfort when used in confined spaces, including but not limited to the following:
 1. Adhesives
 2. Solvents
 3. Sealants (Caulking, etc.)
 4. Other products which may give off air borne particles after installation
 5. Any other product as direct by Architect/Consultants.

-
3. The required Material Safety Data Sheets to be submitted prior to ordering material or product for use as a part of the Work
 4. The Owner may withhold payment for work of a subtrade or section until MSD Sheets for products supplied by that subtrade or section have been submitted, reviewed by Consultant and found to be acceptable.
 5. Refer to Section 01700 - Project Close-Out for requirements regarding Certificates of Compliance.

4. MATERIALS SPECIFICALLY EXCLUDED

1. Asbestos and/or asbestos - containing products are not permitted. Submit Material Safety Data Sheets for any product suspected of containing asbestos if so requested by Consultant. Examples of some materials requiring close scrutiny and/or confirmation include:
 1. Transite drainage pipe - whether buried or above grade - not permitted.
 2. Insulation and/or jacketing for pipes, ducts, motors, pumps, etc. - not permitted if any asbestos is present.
2. Solder for all piping is to be lead-free. "Lead Free" shall mean solder which contains less than 0.030% of lead when dissolved in fluoroboric and nitric acids and tested by inductively coupled argon plasma atomic emission spectroscopy. Steelbond 281 and Silverbrite are acceptable solder products.

The mechanical contractor shall provide an affidavit signed by the principal of the company, on company letterhead, that all of the solder used on the project was either one of the two acceptable products or that the solder used (identified by brand name) meets or exceeds the testing criteria.

The Owner shall undertake random testing of the soldered joints. Should testing provide that the solder used was not as specified, the Owner shall take legal action against the contractor as appropriate.

3. All paint and finish coatings are to be lead and mercury-free. Submit Material Safety Data Sheets confirming that these products are free of all lead and/or mercury compounds.

5. FIRE SAFETY REQUIREMENTS

1. Comply with requirements of the local municipal fire department with respect to continuous fire safety on the job site.
2. Comply with fire safety requirements of other construction related

authorities (Workplace Safety & Insurance Board, Ministry of Labour, construction trade unions, etc.). If more than one authority issues similar requirements, the more stringent shall govern.

3. The appropriate clauses of the Ontario Building Code relating to fire protection shall be strictly followed.
4. Provide and maintain free access to temporary or permanent fire hydrants and other fire protection equipment during performance of work required by insurance companies having jurisdiction and governing codes, regulations and by-laws.

6. OVERLOADING

1. Ensure no part of Work is subjected to a load which will endanger its safety or cause permanent deformation.

7. FALSEWORK AND FORMWORK

1. Design and construct falsework in accordance with latest issue of CSA S269.1

8. ACCESS SCAFFOLDING FOR CONSTRUCTION PURPOSES

1. Design and construct scaffolding in accordance with latest issue of CSA S269.2

9. LIST OF MINIMUM SAFETY

1. Include all provisions for construction safety such as fences, hoarding, storage provisions facilities, sanitation facilities, fire protection, electrical supply, temporary heat, ventilation, construction equipment with its supports and guards, stairs, platforms, ladders, scaffolds, guardrails, walkway lighting and morality lighting, work around asbestos lead, silica and fumes, all as required by the Construction Safety Act and Regulation, latest edition of the Province of Ontario, as well as all other applicable regulations of Jurisdictional Authorities.

10. OWNER SAFETY REQUIREMENTS

1. This section to be read in conjunction with Section 4 – Special Provisions.
2. The Contractor will take all necessary steps to protect personnel (workers, visitors, general public, etc.) and property from any harm during the course of the contract.
3. All work procedures will be in accordance with Owner legislated standards.

4. All equipment shall be in safe operating condition and appropriate to the task.
5. The Contractor shall ensure that only competent personnel are permitted work on site. The owner will throughout the term of the contract also remove from the site any persons not observing or complying with safety requirements.
6. The Contractor shall provide competent personnel to implement their safety programs and ensure that the owner's standards and those of the Ontario Health and Safety Act are being complied with.
7. The owner or the consultant will monitor every week to ensure that safety requirements are met and that safety records are properly kept and maintained. Continued disregard for safety standards can cause the contract to be cancelled and the Contractor or subcontractors removed from site.
8. The Contractor will report to the owner, architect and jurisdictional authorities any accident or incident involving Contractor, owner or public personnel and/or property arising from the contractor's execution of the work.

END OF SECTION

1. **GENERAL**

1. **FIRES**

1. Open fires and burning of rubbish are not permitted on the site.

2. **DISPOSAL OF WASTES**

1. Do not bury rubbish and waste materials on site.
2. Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
3. All removal of waste products and debris resulting from the work must be audited and source-separated to comply with the most current version O.Reg 102 103 Industrial, Commercial and Institutional Source Separation Programs under the Environmental Protection Act and the 3 R's Regulation.

3. **POLLUTION CONTROL**

1. Control emissions from equipment and plant to local authorities emission requirements.
2. Prevent sandblasting and other extraneous materials from contaminating air 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.

4. **NOISE CONTROL**

1. Adhere to local noise bylaws.
2. Equip vehicles and equipment with efficient noise attenuation devices (mufflers) to minimize noise levels in vicinity of Site
3. Where necessary place noise attenuation devices (barriers) around stationery pumps and compressors.

5. **WASTE MANAGEMENT CONTROL**

1. The following set of definitions are intended to augment terms provided within this Article:
 1. 3 R: REDUCE (REDUCTION), REUSE, RECYCLE
 1. REDUCE (REDUCTION) - Reduction involves actions to minimize quantity of waste at source and consequently, assumes highest priority in hierarchy of 3R activities.

2. REUSE - Direct reuse of products which otherwise would become waste, provides another means of diverting quantity of waste destined for landfill.
 3. RECYCLE - Recycling involves collection of materials for use as feedstock in manufacturing of new products. Recycling can be most effectively accomplished if recyclable materials have been source separated at point of generation.
 2. SOURCE SEPARATION - Purposeful segregation of materials from designated solid waste stream into specific material types at point of generation to facilitate recycling.
 3. SOURCE SEPARATED MATERIALS - Specific types of materials that have been purposefully segregated from municipal waste into specific material types at point of generation.
 4. CONSTRUCTION BUSINESS - Business enterprise employing more than 50 persons out of 1 office involved in building, renovation and repair of immobile structures, including soil excavation and landscaping.
 5. DEMOLITION BUSINESS - Business enterprise employing more than 50 persons out of 1 office involved in dismantling any immobile structure, facility or dwelling.
 2. Apply waste management activities of reduction, reuse and recycling of waste materials during construction and/or renovation of this Contract.
6. TEMPORARY BARRIERS AND ENCLOSURES
1. Provide temporary controls in order to execute Work expeditiously.
 2. Remove from site all such Work after use.
 3. Erect temporary site enclosure using 1.8m high construction wire fencing. Maintain fence in good repair.
 4. Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.
 5. Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.
7. WEATHER ENCLOSURES
1. Provide weather tight closures to unfinished exterior openings, assemblies and roofs.
 2. Close off floor areas where walls are not finished; seal off other openings;

enclose building interior work from other floor areas not part of the work site.

8. DUST TIGHT AND SOUND SCREENS

1. Provide dust tight screens and sound insulated partitions to localize dust and noise generating activities, and for protection of workers, finished areas of Work and public outside of the area of work.
2. Maintain and relocate protection until such work is complete.

9. ACCESS TO SITE

1. Maintain clean access roads, crossings, layout spaces and parking areas as required for access to work.

10. PUBLIC TRAFFIC FLOW

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

11. FIRE ROUTES

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

12. PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

1. Protect surrounding private and public property from damage during performance of work.
2. Be responsible for damage incurred.

13. PROTECTION OF BUILDING FINISHES

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

END OF SECTION

1. **GENERAL**

1. **REQUIREMENTS INCLUDED**

1. Systems demonstration
2. Document submission
3. Project commissioning
4. Inspection and takeover procedures

2. **SYSTEM DEMONSTRATION**

1. Prior to final inspection, demonstrate operation of each system to the Owner and Consultant.

3. **DOCUMENTS**

1. Collect reviewed submittals in Section 01010 and 01300 and assemble documents executed by Subcontractors, suppliers, and manufacturers. Submit as per requirements in Section 01010 - General Requirements.
2. Provide bonds fully executed and notarized as applicable to the project.
3. Submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and monies remaining due.
4. Architect will issue a final change order reflecting approved adjustments to Contract Sum not previously made.

4. **PROJECT COMMISSIONING**

1. Expedite and complete deficiencies and defects identified by the Consultant.
2. Review record "as-built" drawings for completeness and then have "as-built" AutoCad 2010 or later drawings completed by a professional drafting service and provide "as-builts" on computer disks.
3. Review Cash and Contingency Allowances in relation to Contract Price, change orders, hold-backs and other Contract Price adjustments.
4. Submit required documentation such as statutory declarations, Workplace Safety & Insurance Board Certificates, certificates of approval or acceptance from regulating bodies.

5. Attend "end-of-work" testing and break-in or start-up demonstrations.
6. Review inspection and testing reports to verify conformance to the intent of the documents and that changes, repairs or replacements have been completed.
7. Meet with consultant and inspection and testing consultant to coordinate completion, testing approvals.

5. INSPECTION/TAKEOVER PROCEDURES

1. Prior to application for certificate of Substantial Performance, carefully inspect the Work and ensure it is complete, that major and minor construction deficiencies are complete and/or corrected and the building is clean and in condition for occupancy. Notify the Architect, in writing, of satisfactory completion of the Work and request an inspection.
2. During the Architect/Consultant inspections, lists of deficiencies and defects will be tabulated. Correct same.
3. When the Architect/Consultants consider deficiencies and defects have been corrected and it appears requirements of the Contract have been performed, make application for certificate of Substantial Performance.

END OF SECTION

1. **GENERAL**

1.1 **Related Sections**

1.1.1 Environmental Protection – Section 01560

1.2 **Dust and Cleaning Requirements**

1.2.1 Standards: Maintain project in accordance with the latest edition of The Occupational Health and Safety Act.

1.2.2 Hazards and Dust Control

- .1 Provide adequate ventilation during use of volatile or noxious substances.
- .2 Prevent spread of dust beyond the construction site by wetting, or by other means suitable for conditions, as it accumulates.
- .3 Provide Tack Mats at entrances to prevent dust and dirt from being traced through the project as required. Dispose of mats and replace on regular basis with new mat.

1.2.3 Floors

- .1 Keep troweled concrete floors free from oils, grease or other materials likely to damage them, discolour them or affect bond of applied finishes.
- .2 To prevent soiling or damage to finish flooring where pedestrian traffic occurs after the flooring has been installed, install and maintain reinforced kraft paper temporary protection, secured in place and with joints sealed by reinforced pressure sensitive tape.
- .3 Install plywood panels of minimum ¼" thickness over completed finish flooring materials on which further construction work is performed or delivery of products is made, or both. Seal joints between panels with reinforced pressure sensitive tape.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Use only cleaning materials recommended by manufacturer of surface to be cleaned.

2.1.2 Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

3. EXECUTION

3.1 During Construction

3.1.1 Execute cleaning to ensure that building and public access is maintained free from accumulations of waste materials and rubbish.

3.1.2 Wet down dry materials and rubbish to prevent blowing dust.

3.1.3 At reasonable intervals during progress of Work, clean work site and dispose of waste materials, debris and rubbish.

3.1.4 Unless otherwise specified, salvaged material resulting from construction, and surplus materials and construction debris shall become property of Contractor, who shall dispose of it away from site.

3.1.5 Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for Substantial Performance or occupancy.

3.1.6 Obtain from each Subcontractor, instructions which designate proper methods and materials to be used in final cleaning, and submit such instructions to the Consultant. Include Instructions in Manufacturer's Data Book specified in Section 01300.

3.1.7 Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

3.1.8 Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly-painted surfaces.

3.2 Final Cleaning

3.2.1 At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all surfaces exposed to view; leave project clean and ready for occupancy.

3.2.2 Employ experienced workers, or professional cleaners, for final cleaning.

- 3.2.3 In preparation for Substantial Performance or occupancy, conduct final inspection of interior and exterior surfaces exposed to view, and of concealed spaces.
 - 3.2.4 Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from all sight-exposed interior and exterior finished surfaces; polish resilient and ceramic surfaces so designated to shine finish. Vacuum carpet.
 - 3.2.5 Clean and polish glass and mirrors.
 - 3.2.6 Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
 - 3.2.8 Clean filters, exposed ductwork, and structure.
 - 3.2.9 Clean bulbs and lamps and replace those burned out.
 - 3.2.10 Clean diffusers and grilles.
 - 3.2.11 Clean sinks, faucets, and water closets and controls.
 - 3.2.13 Maintain cleaning until project, or portion thereof, is occupied by Owner.
- 3.3 Removal of Temporary Facilities**
- 3.3.1 Completely remove temporary facilities from site, making good any damage when no longer required.

END OF SECTION

The printed forms outlined below shall form the basis of communication between the Architect and the General Contractor. Copies of forms unrelated to the issuance of monies, shall be kept on the site; neatly filed and readily accessible to the parties concerned.

1. **TRANSMITTAL RECORD**

A record of material issued by the Architect or General Contractor.

2. **GENERAL REVIEW REPORT**

A progress report completed by the Architect or Consultant on a regular basis.

3. **PROPOSED CHANGE**

A description of contemplated changes to the Contract.

4. **CASH ALLOWANCE CHANGE ORDER**

Assignment of money for work executed under the Cash Allowance Section.

5. **CHANGE ORDER**

Assignment of money for work executed beyond the financial limits of the Contract.

6. **CHANGE DIRECTIVE**

A description of a change in the work when the Owner requires the Contractor to proceed with a change in the work prior to the Owner and the Contractor agreeing upon the adjustment in Contract Price and Contract Time.

7. **CERTIFICATE FOR PAYMENT**

For release of contract money based on monthly progress draws.

8. **SUPPLEMENTAL INSTRUCTIONS**

A description and/or clarification for the purpose of recording a clarification or interpretation of the contract documents or giving directions on problems resulting from field conditions.

END OF SECTION

1. GENERAL

1.1. Conform to Sections of Division 1 as applicable.

1.2. REFERENCES

1.2.1. CSA S350 M80 (R2003) Code of Practice for Safety in Demolition of Structures

1.3. QUALITY ASSURANCE

1.3.1. Regulatory Requirements:

1.3.2. Conform to the latest Occupational Health and Safety Act, as currently amended.

1.3.3. Most recent Occupational Health and Safety Act, as currently amended, Designated Substance - Asbestos on Construction Projects and in Building and Repair Operations;

1.3.4. Conform to OBC, especially Article 2.3.2.3 as applicable.

1.3.5. Conform to Fire Code, Regulation under Fire Marshals Act especially Part 8.

1.3.6. Remove hazardous materials in accordance with applicable laws and regulations.

1.3.7. Qualifications:

Employ for this work demolition company having 5 years' Canadian experience in this type of work satisfactory to Consultant/Owner. If requested, submit proof of experience.

1.4. PROJECT CONDITIONS

1.4.1. Protect building users & existing building from harm or damage due to demolition work for all elements.

2. PRODUCTS

2.1. All existing components being demolished shall become property of this Section. Remove from Site.

3. EXECUTION

3.1. PREPARATION

3.1.1. Protect **all** existing adjacent work (cladding, wainscoting, plaster walls, windows, frames, bases and trim, etc) against damages which might occur from falling debris, scrapes or other causes due to work of this Section.

3.1.2. On completion make good surfaces to match adjacent surfaces of building. Ensure that all dust and debris is removed before finishing work

commences.

3.2. PERFORMANCE

- 3.2.1. Contractor to remove existing materials as noted on the drawings.
- 3.2.2. Materials and debris shall not be stacked in building but removed entirely from all circulation spaces at the end of each day.
- 3.2.3. At end of each day's work leave work in safe and clean condition.
- 3.2.4. Carry out demolition in accordance with requirements of CSA S350-M. Demolish and remove materials from Site.

3.3. DISPOSAL OF WASTE MATERIALS

- 3.3.1. Selling or burning of materials on Site is not permitted.
- 3.3.2. Provide bin for garbage on sidewalk in a location acceptable to the Owner.
- 3.3.3. Conform to requirements of Town of Milton's Works Department regarding disposal of waste materials.
- 3.3.4. Materials prohibited from Town of Milton waste management facilities shall be removed from Site and dispose of at recycling companies specializing in recyclable materials.

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements, is a part of this section and shall apply as if repeated here.

2. **SHOP DRAWINGS**

1. Submit shop drawings in accordance with Section 01300.
2. Submit shop drawings for review by the Architect prior to fabrication.
3. Design Criteria-Applicable Standards:
 1. All standards in accordance with latest issue.
 2. CSA Standard CAN3-S16.1-M, "Steel Structures for Buildings" Limit States Design.
 3. CSA Standard W59, "Welded Steel Construction" (Metal Arc Welding).
 4. CSA Standard W.55.2, "Resistance Welding Practice."
 5. CSA Standard W55.3, "Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings."
 6. CSA Standard W.47, "Certification of Companies for Fusion Welding of Steel Structures."
 7. CSA Standard S.136, "Cold Formed Steel Structural Members".
 8. Ontario Building Code.
4. Certificates:
 1. Provide a certificate signed and sealed by the licensed/registered professional engineer responsible for the stair designs and the detailed steel connections (including guards) stating that the stairs and connections have been designed, detailed and fabricated in accordance with the applicable standards.
 2. Certification must bear the original seal and signature of the engineer and be dated. Photocopies are not acceptable.
5. Clearly indicate construction details, sizes of steel sections, thickness or gauge of steel sheet, connections, joints, method of anchorage, number of anchors, supports, reinforcement and accessories. Confirm all

dimensions on site.

3. STANDARDS

1. Materials and workmanship shall conform to the requirements of the Latest Ontario Building Code, as currently amended.
2. Do welding work to CSA W59, unless specified otherwise. Welders to qualify under CSA W47, CSA 55.2 and CSA W55.3.
3. Design of steel fabrications, unit stresses and workmanship to conform to CSA CAN3-S16 1-M.

4. DESIGN CRITERIA

1. Design stair: landing construction; guards and railings and connections to conform to the Ontario Building Code.
2. Design detail and fabricate in general to CSA CAN3-S16 1-M.

5. QUALITY ASSURANCE

1. WELDING APPLICABLE STANDARDS:

1. CSA Standard W59, "Welded Steel Construction" (Metal Arc Welding).
2. CSA Standard W.55.2, "Resistance Welding Practice."
3. CSA Standard W55.3, "Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings."
4. CSA Standard W.47, "Certification of Companies for Fusion Welding of Steel Structures."

2. QUALITY ASSURANCE

1. Fabrication and erection of all components to be by companies holding current C.W.B. Certification as Division 1 or Division 2.1. All welding by welders holding current certification for the required welding position.

6. SCOPE

1. Provide all miscellaneous metals (incl. stainless steel and aluminum) items as detailed and noted under other sections.
2. Provide all additional miscellaneous steel items as required to complete the above work.

2. PRODUCTS

1. MATERIALS

1. Ferrous Metals:

1. Unless otherwise indicated, hot rolled mild steel in .15% to .25% carbon range.
2. Steel sections and plate: CSA G40.21-/M1987, minimum 260W grade.
3. Square steel tube: CSA G40.21-/M1987, Grade 350W.
4. Steel pipe: ASTM A53-76, Type E, Grade A.
5. Sheet Steel: hot dip galvanized, cold rolled, with stretcher level degree of flatness to ASTM A526; zinc coating designation Z275.

2. Aluminum: CSA HA Series - M1980 for aluminum and aluminum alloys, Alcan 50S Alloy.

3. Prime Paint: Oil alkyd type (shop coat) conforming to CGSB-1-GP-40M. Colour to be grey.

4. Expansion Joints: as specified.

5. Welding Materials: CSA W59-1984.

6. Bituminous Enamel: Alkali resistant asphaltic coating conforming to CGSB1-GP-108M.

7. Non-shrink Grout: Por-Rok by Hallemite Products Ltd., or SET 15 Minute Anchoring Cement by SET Products Ltd.

8. Galvanized Touch-Up Paint: Zinc rich, Galvafruid by W.R. Meddows of Canada Ltd. or approved equal.

9. Hot Dipped Galvanizing: conform to CSA G164-M1981.

10. Bolts and Anchor Bolts: to ASTM A307-82a.

11. Stainless Steel:

1. **All** to have brushed finish, Type 304 finish to be ornamental grade AISI No.4.

2. FABRICATION - GENERAL

1. Fabricate components in the shop in largest size practicable to minimize field jointing.
2. Fabricate components square, straight, true, free from warpage and other defects. Accurately cut, machine file and fit joints, corners, copes and mitres.
3. Reinforce fabricated components to safely withstand expected loads.
4. Make joints in built-up sections with hairline joints in least conspicuous locations and manner.
5. Make allowance for thermal expansion and contraction when fabricating exterior work.
6. Joints shall be welded unless otherwise indicated and unless details of construction do not permit welding. Exposed welds shall be continuous and shall be ground smooth.
7. Close exposed open ends of tubular members with welded on steel plugs.
8. Where work of other Sections is to be attached to work of this section, prepare work by drilling and tapping holes, as required to facilitate installation of such other work.
9. Work of this Section, supplied for installation under other Sections, shall be prepared as required ready for installation by: drilling, countersinking and tapping holes, forming shapes and cutting to required sizes.
10. Grind off mill stampings and fill recessed markings on steel components left exposed to view.
11. Make workmanship of best grade of modern shop and field practice known to recognized manufacturers specializing in this work. Fit joints and intersecting members accurately. Make work in true plumb, true, square, straight, level and accurate to sizes and shapes detailed, free from distortion or defects detrimental to appearance or performance.
12. Insulate metals where necessary to prevent corrosion due to contact between dissimilar metals and between metals and masonry, concrete or plaster. Use bituminous paint, butyl tape, building paper or other approved means.
13. Supply all fastenings, anchors and accessories required for fabrication

and erection of the work. Make exposed metal fastenings and accessories of same material, texture, colour and finish as base metal on which they occur unless otherwise shown or specified. Keep exposed fastenings to an absolute minimum and inconspicuous, spacing them evenly and setting them out neatly. Make fastenings of permanent type.

14. Draw mechanical joints to hairline tightness and seal countersunk screws and access holes for locking screws with metal filler where these occur on exposed surface.

3. FINISHES

1. Thoroughly clean steel of loose scale, rust, oil, dirt and other foreign matter. Suitable prepare steel surfaces by power tool cleaning to receive specified finishes.
2. Grind smooth sharp projections.
3. Remove oil and grease by solvent cleaning.
4. Apply coatings in the shop and before assembly. Where size permits, galvanize components after assembly.
5. Shop apply coat of primer to interior components after fabrication except where galvanized finish and stainless steel is required.
6. Hot dip galvanize exterior components and other components, where so indicated, after fabrication in accord with requirements of CSA Standard G164-M1981.
7. Apply coat of bituminous enamel to contact surfaces of metal components in contact with cementitious materials and dissimilar metals.
8. After erection and installation, thoroughly clean the work and apply field touch up of same formula as shop coat to all damaged or unpainted surfaces. Work all paint well into all joints, crevices and open spaces.

4. MISCELLANEOUS STEEL SECTIONS

1. Supply all miscellaneous steel angles, plates, lintels, etc., indicated on the architectural drawings & not indicated on the structural drawings or noted on the structural drawings by others. Size according to loads, set plumb and true and securely fix. Continuously weld and grind smooth exposed connections. Others may be welded or bolted.

3. EXECUTION

1. INSTALLATION

1. Install components plumb, square, straight and true to line. Drill, cut and

fit as necessary to attach this work to adjoining work.

2. Provide temporary supports and bracing required to position components until they are permanently anchored in place.
3. Securely anchor components in place; unless otherwise indicated, anchor components as follows:
 1. To concrete and solid masonry with expansion shields and bolts.
 2. To hollow construction with toggle bolts.
 3. To thin metal with screws or bolts.
 4. To thick metal with bolts or by welding.
 5. Fill space between railing members and sleeves with non-shrink grout.
 6. To wood with bolts or lag screws.
4. Provide all components required for anchoring. Make anchoring in concealed manner wherever possible. Make exposed fastenings, where approved by Architect neatly and of same material, colour, texture and finish as base metal on which they occur. Keep exposed fastenings evenly spaced.
5. Dissimilar metals and metals in contact with cementitious elements shall have contact surfaces coated with bituminous paint or be isolated by other means as approved by Architect.
6. After installation, clean and refinish injured finishes, welds, bolt heads and nuts. Refinish with zinc rich paint or primer to match original finish.

2. HANDRAILS

1. Unless shown otherwise on drawings or in this Section, handrails shall be as follows:
 1. General:
 1. Construct rails of standard steel pipe of sizes indicated on drawings.
 2. Where not indicated, pipe handrails to be 1 ½" (38 mm) O.D.
 3. Joints and intersecting members welded and ground smooth. Where rails return to walls or other vertical faces,

cut off and grind smooth 1/4" (6 mm) from vertical face.
See drawings for details.

2. Install brackets in best standard practice, space not more than 4'-0" (1200 mm) o.c. for wall handrails. Brackets shall be as shown on drawings. Mount handrailing to height shown on drawings.
3. Where handrails and top rail on guard are shown on drawings as not galvanized or stainless steel, such railings shall be shop primed for painting. Painting to be done under Section 09900.
4. Supply and install handrails and balustrades to safely support a horizontal load of 103 lb/lin. ft. (1.5 kN/m) applied at the top of the rail.
5. Supply and install stainless steel handrail, top rail on guard and as per latest O.B.C.s requirements, Type 304 with ornamental grade A.I.S.I. No. 4 finish where stainless steel is indicated on drawings.
6. See Section 08800 glass and glazing and 08810 glass balustrades for glazing and handrails at stairs with glass.

3. MISCELLANEOUS ITEMS, STEEL BRACKETS SUPPORTS AND ANGLES

1. Supply for installation by respective trades, steel brackets, supports, and angles as indicated on drawings. Drill for countersunk screws and anchor bolts. Prime paint for interior, galvanize for exterior.
2. Provide steel miscellaneous angles and hanger rods as indicated.
3. Provide other metal fabrications which are not a part of a manufactured item or covered under another section in Division 5. Refer to drawings.

4. STEEL FOR INTERIOR SCREEN/PARAPET WALL

1. Provide steel for deck closure at new parapet work, refer to drawings.

5. CAVITY CLOSURES AND COMPARTMENT CONTROL JOINTS

1. Cavity Closures: 12 gauge 304 stainless steel with 2B finish cold rolled formed to suit continuous bent closure profile:(at new cladding installation)
 - around all window wall openings;
 - around all door openings,
 - around all other misc. openings through exterior cavity wall
 - at expansion joints and control jointsClosure(s) to have minimum dimensions to meet or exceed cavity wall insulation thickness / depth on both flanges. Do not over exceed

insulation and air space cavity dimensions as to block off drainage and air space, this is to remain free of infill to breathe and drain.

2. Compartment Control Joint (CCJ): 12 gauge 304 stainless steel, 2B finish cold rolled formed, complete with ss reinforcing wire @ 400 o/c through slotted holes.

1. Exterior wall locations. Install CCJ at:

1. All exterior corners, 300mm from corner on both sides;
2. All interior corners
Max. 20m horizontally on walls and wherever indicated on the drawings.

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One - General Requirements, is a part of this Section, and shall apply as if repeated here.

2. **REFERENCE STANDARDS**

1. Standard of finished carpentry, metal work and cabinet work in accordance with the "Architectural Millwork Standards" of the Architectural Woodwork Manufacturers Association of Canada (AWMAC).

3. **QUALIFICATIONS**

1. The work of this trade shall be executed by a company having a minimum of 5 years proven first class experience in this type of work and having adequate equipment and skilled personnel. Refer to Instructions to Bidders for list of Prequalified Trades.

4. **SHOP DRAWINGS**

1. Submit Shop Drawings in electronic PDF format in accordance with GC.3.10 of CCDC Document 2 - 2008.
2. Before Shop Drawings and fabrication are started, take critical measurements at the site to facilitate installation and fitting of work.
3. Design Criteria - Applicable Standards:
 1. All standards in accordance with latest issue.
 2. Ontario Building Code
4. Clearly indicate construction details, sizes and wood and steel sections, thickness or gauge of wood and steel sheet, connections, joints, method of anchorage, number or anchors, supports, reinforcement and accessories. Confirm all dimensions on site.

5. **DELIVERY AND STORAGE**

1. Give Painter sufficient notice so that untreated or unpainted carpentry items or materials can be primed immediately upon delivery to site.
2. No equipment shall be delivered to the site until a portion of the building in which it is to be installed is completely ready for equipment as approved by the Architect.

3. Store finished work properly and keep under cover both in transit and at site. Finish woodwork shall not be delivered to site until concrete and masonry work has dried out.
4. Cover all plastic laminate and melamine faces at shop with heavy Kraft Paper.
5. Check access clearance at site before assembling.

6. SAMPLES

1. Submit duplicate 12" x 12" (300 mm x 300 mm) samples of each type of panelling and each type of solid wood or plywood to receive stain or natural finish.
2. Submit duplicate 12" (300 mm) long samples of each type of moulding.
3. Submit samples of construction methods and all hardware.

7. WARRANTY

1. The warranty period stipulated in the General Conditions of the Contract shall be extended five (5) years in writing against defects.

8. MOISTURE CONTENT

1. Finish material to be dried to a uniform maximum moisture content of 12% for exterior work and 6% to 8% for interior work.

2. PRODUCTS

1. MATERIALS

1. Materials used for finish work shall be sound, free from defects that would mar finished appearance, well seasoned and air dried and of good quality for intended purposes. Wood laminates pressure bonded.
2. Plywoods; shall be rift cut or quarter sawn Oak and/or plain sliced Maple architectural grade "AA" No. 1 Face Grade and shall comply to C.S.A. 0115-M1982, with plywood core, laminated with waterproof adhesive. Plywood shall be good both sides.
3. Hardwoods - Shall be solid selected Oak / Maple Architectural Grade 'AA'. Wood shall be selected for uniform colours and graining when at stained and varnished items. Finger jointed woods will not be accepted.
4. Framing Lumber - No. 2 or better spruce, pine or fir best mercantile lumber.

5. Penetrating Sealer - "Penetrim" by Tremco Mfg. Co. (Canada) Ltd., or "1402" by MacNaughton Brooks Ltd.
6. Painted Hardwood: American Poplar ("White Wood") "C" select grade.
7. Plastic Laminate: 1/16" (1.5 mm) thick decorative high pressure laminated plastic sheeting conforming to CAN3-A172-M1979 and all applicable requirements of O.B.C. (not limited to flame spread rating and smoke development classification.) Manufacturer shall thoroughly sand back of sheet to form a homogenous bonding surface. Plastic laminate manufacturer shall be selected by Architect from Formica, Wilsonart, Arborite or Nevamar unless otherwise indicated. Backing Sheet .020" (.5 mm) thick, sanded one side. Final colour pattern and finish to be selected by Architect from manufacturer's full range of products.
8. Adhesive: As recommended by manufacturer for required application and to conform to C.S.A. 0121-M1978.
9. Nails, Spikes and Staples: To C.S.A. B111-1974, plain finish nails. Use spiral thread nails and barbed staples.
10. Exposed fasteners: All exposed fasteners to be stainless steel. At exposed screw locations use stainless steel screws and cup washers.
11. Refer to drawings and details for complete list of materials to be installed.

3. EXECUTION

1. WORKMANSHIP

1. Work shall be executed by mechanics skilled in their respective trade, according to best practice, or specified herein and indicated on drawings.
2. Check job dimensions and conditions and notify the Architect in writing of unacceptable conditions. Do not proceed until remedial instructions are received. Commencement of work will imply acceptance of site conditions and re-working or modification of the work as deemed necessary by the Architect will be done at no extra cost to the Owner.
3. As far as practical, assemble work at the shop and deliver to the job ready for installation. Leave ample allowance for fitting and scribing on the job.
4. Fabricate work square and to the required lines.
5. Lay out work carefully as indicated and to accommodate work of other trades. Accurately cut and fit; erect in proper position true to dimen-

sions. Align, level, square, plumb, adequately brace, and secure permanently in place.

6. Use treated lumber for studs, blocking nailers, furring and other wood permanently installed in building. Brush coat freshly cut ends with two coats of concentrated form of preservative.
7. Recess and conceal fasteners and anchor heads. Fill with matching wood plugs. Set nail heads and fasteners occurring within exposed interior carpentry work.
8. Provide wood members free from bruises, blemishes, mineral marks, knots, shake and other defects and select for uniform colour grain and texture. Machine and hand sand surfaces exposed in the finished work to an even, smooth surface free from defects detrimental to appearance.
9. Provide running members in the maximum lengths obtainable. Provide thickness of members in maximum dressed size of standard lumber. Where thickness of width indicated is not available in hardwoods, use glue laminations to obtain sizes required. Provide unexposed backs of veneers having the same physical characteristics as the face veneer.
10. Give painter sufficient notice so that untreated or unprimed carpentry items or materials can be primed immediately upon delivery to site. No exposed end grain of plywood shall be permitted; edging shall be solid 3/8" (10 mm) wide by thickness of plywood and of same species of wood. Finger jointed edging will not be accepted.
11. Co-operate with others engaged in work on the building to the end that proper unity of action will assure the orderly progress of the work. Do necessary boxing and protecting of sills, jambs, corners and the like. Construct scaffold, ramps, and other temporary staging necessary.
12. Chamfer edges of plastic laminate to avoid chipping.

2. WOOD DOOR INSTALLATION.

1. Fit wood doors to frame by dressing off hinge edge before applying butts. Provide 3/32" (2.5 mm) clearance at jambs and heads. Mount so as to swing easily and freely on their hinges and close accurately against the stops on the frames without binding. Latch bolts shall engage positively with the strikes or catches when the doors are slammed shut or closed with moderate force. Doors shall remain stationary in every position without independent motion.

3. WOOD DOOR HARDWARE INSTALLATION

1. Install finishing hardware supplied under Section 08700 on wood doors.

2. Installation is to be performed by a certified hardware installer.
 3. Complete preparation of wood doors for all hardware including mortise type latch setser.
 4. At completion of the work, moving parts shall be gone over, made to work easily, smoothly and efficiently. Work carefully cleaned down and left in complete and finished condition satisfactory to Architect.
 5. As per Section 08700, hardware supplier shall check all hardware for proper operation when it has been installed and shall notify the Architect of any cases where it has not been properly installed, is defective, or is not as specified.
8. WASHROOM ACCESSORIES
1. Install all washroom accessories as supplied in Section 10800.
9. INSTALLATION
1. Deliver Finish Carpentry to the site. Provide units of such sizes as will not present difficulty of entry to the place of installation. Where units are shipped in knock-down forms, provide clear instructions for assembly.
 2. Install Finish Carpentry items plumb, square, true, rigid and secure with concealed fastening at exposed areas and with stainless steel screws and cup washers where secured inside of millwork units.

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements, is a part of this Section, and shall apply as if repeated here.

2. **REFERENCE STANDARDS**

1. Standard of finished carpentry, metalwork and cabinet work in accordance with the "Millwork Standards" of the Architectural Woodwork Manufacturers Association of Canada (AWMAC).

3. **QUALIFICATIONS**

1. The work of this trade shall be executed by a company having a minimum of 5 years proven first class experience in this type of work and having adequate equipment and skilled personnel. Contractor to be from pre-approved list.

4. **WORK INCLUDED**

1. Provide prefinished cabinets, display cases, shelving units, counters, vanities, and similar items where shown on drawings as specified herein, and as needed for a complete and proper installation.
2. Provision of rough hardware, including fastening devices required to secure in place items of carpentry and millwork.
3. Supply and installation of finishing hardware for millwork by this millwork contractor section 06400.
4. Supply and installation of grilles, etc. on millwork items.
5. Installation of all miscellaneous metals for millwork items by Section 05500 Miscellaneous Metals..
6. Supply and installation miscellaneous trims, scribes, filler panels.
7. Provide cutouts in the counter tops for the sinks, electrical outlets and all other necessary cutouts regarding the millwork.

5. **SHOP DRAWINGS**

1. Submit Shop Drawings in electronic PDF format in accordance with GC 3.10 of CCDC-2-2008 and Section 01300 – Submittals.
2. Before shop drawings and fabrication is started, take critical measurements at the site to facilitate installation, fitting of work and access

required to move millwork into final location. Take such measurements prior to fabrication of the work of this section and in ample time to avoid delays in the work.

3. Draw Shop Drawings in related and/or dimensional positions with sections. Scale minimum 1:10. Shop drawing detail numbering to be same as Architectural Drawing detail numbering.
4. Shop Drawings shall show fabrication details, materials, jointing, description of anchorage and hardware.

6. DELIVERY AND STORAGE

1. Give Painter sufficient notice so that untreated or unprimed carpentry items or materials can be primed immediately upon delivery to site.
2. No equipment shall be delivered to the site until portion of the building in which it is to be installed is completely ready for equipment as approved by Consultant.
3. Store finished work properly and keep under cover both in transit and at site. Finish woodwork shall not be delivered to site until concrete and masonry work has dried out.
4. Cover all plastic laminate and prefinished top surfaces at shop with heavy Kraft Paper.
5. Carefully protect from damage of any kind.

1. SHOP FINISH

1. All cabinet work, to be shop finished by this Section as per Section 09900.

2. SAMPLES

1. Submit duplicate 12"x12" (300 mm x 300 mm) samples of each type of paneling (plastic laminate, melamine c/w edging) and each type of solid wood or plywood to receive stain or natural finish.
2. Submit duplicate 12" (300 mm) long samples of each type of molding.
3. Submit samples of construction methods and of all hardware.

3. INTENT

1. The intent of this Section is that casework shall be manufactured and finished at the plant, delivered to the Site and immediately installed by this Section including provision of necessary strapping, backings, bearers, rough hardware and finish hardware and miscellaneous support metals

and stainless steel metal components. Touch up finish immediately prior to completion of the Work and leave in perfect condition.

4. CO-OPERATION

1. Water, drainage and air piping, faucets, traps, ventilation ducts, sinks, electric receptacles and wiring are supplied and installed by the Mechanical and Electrical Sections at all rooms. Co-ordinate the work with these trades and make provision in the construction of the fitments to accommodate this work. Methods of construction shall be such as to permit mechanical and electrical work being concealed in the fitments, cut and frame accordingly, provide removal access panels in the units or provide proper access for installation and repairs.
2. Cabinet hardware, pilaster strips, locks, finishing hardware and miscellaneous metals will be supplied by this Section.
3. Woodwork, not shop primed, will be primed and back painted as per painting section immediately upon delivery to the site. Care shall be taken that all surfaces cut after priming are brush coated with an approved primer before installation. This section to ensure that woodwork and trim which are to be installed directly against masonry are back painted with one coat of priming paint before installation.
4. Work of this section shall be coordinated with work of other sections where such work is adjacent to or dependent on the placement of the work of this section. Review all drawings for all such related work and coordinate scheduling, sizes, mounting location, required cutouts, clearances, etc. required for proper installation of all related work. Modification of the work of this section due to lack of coordination will be done at no extra cost to the Owner.

5. MAINTENANCE

1. Provide Owner with printed instructions for "Care and Maintenance of Plastic Laminate" and millwork finishes.

6. WARRANTY

1. Warranty workmanship against manufacturing defects, including warpage or delamination, for a period of five (5) years from date of acceptance of the completed installation. Make good or replace work showing defects in this period, as requested, at no expense to the Owner.

2. PRODUCTS

1. MATERIALS

1. Finishing Work: Materials used for finish work shall be sound, free from defects that would mar finished appearance, well-seasoned and air dried and of good quality for intended purposes. Wood laminates pressure bonded.
2. Plywoods:
 1. Select Rift Cut / Quarter Sawn Oak architectural Grade 'A' No. 1 Face grade (varnish grade) as in compliance with C.S.A. 0115-M1982 with a minimum 5 ply plywood veneer waterproof core, laminated with waterproof adhesive. Plywood shall be good both sides except where concealed by construction. Exposed faces to be natural grade per AWMAC. Interior of doors to be classified as exposed.
3. Hardwood: shall be selected Oak, all shall be Architectural Grade (knots will not be accepted). It shall be selected for colours and graining when used for stain work.
4. Wood Edging: 1/8" (3 mm) hardwood to match plywood unless indicated otherwise (if oak, use oak).
5. Plywood Concealed by Construction: Douglas Fir plywood shall be veneer core, waterproof, bonded, sanded, complying with C.S.A. 0121-M1978. Solid grade where concealed by construction.
6. Concealed Framing Lumber: N.L.G.A.C. select eastern white pine, kiln dried to a 5% moisture content.
7. Unexposed Plywood for Framing: Waterproof fir plywood minimum 1/2" (12.7 mm) thickness unless indicated otherwise.
8. Adhesive:
 1. Waterproof synthetic resinous glue of approved general type conforming to C.S.A. 0112.
 2. For plastic laminate - as recommended by plastic laminate manufacturer and to conform to C.S.A. 0120-M1978.
 3. Approved waterproof type.
9. Plastic Laminate:

1. Laminated Plastic for Flatwork: .062" (1.6 mm) thick decorative surfaced, high pressure laminated plastic sheeting to conform to CAN3-A172-M1979 Grade G.P., Type 1. Manufacturer shall thoroughly sand back of sheet to form a homogeneous bonding surface. Backing sheet .020" (.5 mm) thick, sanded one side. Plastic laminates shall be as manufactured by Nevamar. Colour to be Eiskaffe WZ0056T. Approved equal alternate by Formica, Arborite or Wilsonart.
2. Laminated plastic for postforming work and preforming work: to CAN3-A172-M79 Grade P.F., Type 3, .050" (1.25 mm) thick. Plastic laminates shall be as manufactured by Nevamar. Backing sheet .020" (.5 mm) thick, sanded one side. Colour to be Eiskaffe WZ0056T. Approved equal alternate by Formica, Arborite or Wilsonart.
10. Nails and Staples: To C.S.A. Bill-1974. Use spiral threaded nails and barbed staples.
11. Architectural Woodwork Finish: Refer to Section 09900.
12. Shelves: adjustable shelves longer than 950 mm and fixed shelves without centre supports longer than 950 mm to be 28.6 mm thick wood veneer plywood detailed. Shelves shorter than lengths specified above are to be 19 mm thick wood veneer plywood core. Front and rear edges of adjustable shelves to have solid wood edges. Front edges of fixed shelves to have solid wood edges, rear edge to be secured to cabinet back panel.
13. Miscellaneous Metals: Miscellaneous angles, tubes, brackets, supports, etc. as noted/ detailed on drawings or as required for complete and proper installation. provided by Section 05500.
14. Exposed Fasteners: All millwork units secured to walls shall be secured with stainless steel screws and cup washers. All specialty fasteners such as acorn head bolts shall be supplied and installed by this section. Submit samples for Architect's approval. All exposed fasteners to be stainless steel.
15. Melamine Faced Particle Board: to CAN3-0.188.1-M78, grade "R" particle board sanded faces, 13 mm, 16 mm, 19 mm, 28.6 mm and 32 mm thickness, faced with laminated plastic. Melamine resin impregnated cover sheet with coloured and/or patterned paper inner layer. Melamine shall be thermally fused to rigid particle board substrate. Melamine faces shall be 120 Gram Weight Paper. Maximum three colours/patterns to be chosen by Consultant from manufacturer's full range.
16. PVC Edge Banding: solid polyvinylchloride (PVC), 3 mm thickness x full width of board to match each type of plastic laminate or melamine colour choice. Final colour by Architect.

1. FABRICATION

1. General

1. Fitments shall be machined, assembled in mill where possible and delivered to job in units. Construct in accordance with details using first class cabinet construction with joints dowelled, glued and properly fastened.
2. Check job dimensions and conditions and notify the Architect in writing of unacceptable conditions. Design construction methods for expansion. Do not proceed until remedial instructions are received.
3. Deliver work to the job ready for installation. Leave ample allowance for fitting and scribing on the job. Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings, Design units to fit together if site assembly is required.
4. Fabricate work square and to the required lines. Recess and conceal fasteners and anchor heads. Fill with matching wood plugs.
5. Comply with glue manufacturer's recommendations for lumber moisture content, glue life, pot life, working life, mixing spreading, assembly time, time under pressure and ambient temperature.
6. The interior of counters, cupboards, shelving units, desks, shall be considered "exposed". Counter tops which are to receive plastic laminate coverings may be 3/4" (19 mm) thick sanded veneer core plywood. Plywood platewood core shall be used for shelving and gables, countertops and high moisture areas unless specifically called for as solid material. Provide biscuit wafers fully glued at all counter top butt joints c/w two draw bolts Richelieu 516-2G.
7. Refer to Drawings and Architectural Detail Sheets for location, details, number of units required and location of fittings.
8. Interior fitments shall be complete in every respect with special fittings required and hardware.
9. Provide exposed end grain of solid members and edges of exposed plywood with matching solid hardwood edging at least

1/4" (6.4 mm) thick and thicker where specified. At melamine faced particle board provide 3 mm P.V.C. edging complete with 3 mm radius on all exposed edges and corners.

10. Make all necessary cut-outs in the furniture for sinks, appliances, and electrical switch and outlet boxes and pre-drill all mounting holes for faucets, fittings and outlet boxes. Refer to electrical and mechanical drawings and specifications.
11. Provide and install pipe covers, scribing pieces, top, bottom and/or closures and filler panels where necessary, including wherever units require furring out or blocking to existing conduits, pipes, etc.
12. Service cover panels to be provided at all kneehole drawer units, kneehole front rails and knee drawer table assemblies. End closing panels to be provided at all exposed ends of service strips and island/peninsula assemblies. Front filler panels to be provided where called for on Drawings and as required by field conditions.
13. Telephone and electrical receptacles and wiring are specified under Electrical Division. Co-ordinate work of this trade, make provision to accommodate this work and cut tops for and provide wood bearers for support.
14. Cooperate with others engaged in work on the building to the end that proper unity of action will assure the orderly progress of the work. Do necessary boxing and protecting of sills, jambs, and the like. Construct scaffold, ramps, and other temporary staging necessary.
15. Provide 3/4" (19 mm) plywood adjustable or fixed shelving where detailed. Maximum unsupported span for shelving shall be 3'-0" (900 mm). Fixed shelves shall be housed into gables and divisions. Where adjustable shelves are set on angle clips on metal pilaster strips occurring on both sides of a divider, they shall be staggered. **NOTE:** All adjustable shelves on metal pilasters shall have pilaster recessed flush with face of the gables. Where shelves are set on clips only, gables shall be drilled 32 mm o.c. for total height of gables. Provide 3 rows of holes and clips for shelves deeper than 400 mm.
16. The plywood used in interior fitments throughout regardless of whether for paint or stain finish, shall have exposed edges edged with solid strips 1/4" (6 mm) wide, unless noted otherwise by full thickness of plywood. No exposed edges of plywood will be permitted. Strips shall be glued and accurately fixed to edges. Adjustable shelves shall have strips applied to front edge.

17. Exposed framing members and trim shall be solid Oak.
18. Plastic laminate coverings to fitments, cupboards and counters shall be in colours selected by Architect, and applied in accordance with manufacturer's directions. Where plastic laminate occurs, exposed edges and edges around cut-outs such as sinks shall be edged in the same material. Where tops and splashbacks are indicated, the laminate backing sheets shall be used on back face of material on which plastic laminate facing sheets are applied to minimize twist. Bond plastic laminate using waterproof glue. Self edging shall be 1/16" (1.5 mm) material electro pressure sealed and with edges beveled. Joints will not be permitted except in lengths exceeding 8'-0" (2400 mm) in length. Butt joints tightly together. Chamfer edges of plastic laminate to avoid chipping. Apply backing sheet to plywood. Seal remaining exposed edges of surfaces with heavy Kraft paper prior to shipment. Paper shall not be removed until final cleaning. When cutting holes in plastic laminate work, corners shall be rounded and filed smooth.
19. When cutting holes in plastic laminate work, corners shall be rounded and filed smooth.
20. Protection erected by this trade shall be removed, damage to this work and adjoining work due to the lack or failure of such protection, made good and debris, surplus materials, plant and equipment removed and premises and the whole left clean and tidy to Architect's satisfaction.
21. Fabricate all plywood, plastic laminate and melamine faced particle board backs, gables and bottoms of millwork units together by means of 8 mm x 25 mm hardwood dowels or with hardwood biscuits. All backs to be 5/8" (16 mm) stock. Dowel all panel cabinet components using 5 mm x 25 mm hardwood dowels or biscuits at maximum 4" (100 mm) o.c. All drawer bottoms and backs are 2" stock or greater. All exposed edges to be at least 1/4" (6.4 mm) thick matching hardwood edge banding at Oak units and thicker where specified. At plastic laminate and melamine faced particle board provide 3 mm P.V.C. edging complete with 3 mm radius on all exposed edges and corners. Kick material for normal application shall be 3/4" (19 mm) waterproof fir plywood to be used. Resilient base by Section 09650 and quarry tile base by Section 09300.

1. Counters

1. Frame as detailed:

1. with 3/4" (19 mm) thick, or as noted otherwise, plywood gables, backs, tops and bottoms. House intermediate dividers and plywood backs, into gables and top and bottom shelves, for all fitments. Plywood shall be Oak as called for in this Section unless otherwise indicated.
2. Counter tops with sinks to be 3/4" (19 mm) waterproof fir plywood post formed with solid bullnose & coved backsplash and plastic laminate finish as specified herein.
2. Cut countertops for sinks and provide bearers. Provide splashback at back of sink for entire length of the unit and at return ends where walls occur.
3. Countertop and splashback will be plastic laminate unless noted otherwise.
4. Provide removable plywood access panels, screwed in place, where necessary for access to concealed wiring.
5. Fit trim and scribe moulds to fitments as shown and as required to hide voids at walls, partitions and ceilings.
6. Provide cut-outs for inserts, outlets, grilles, appliances, etc. occurring in fitments.
7. Bottom of units blocked up to form a 4" (100 mm) high x 3" (75 mm) deep toe space and fabricated with waterproof plywood tenoned to gables (for melamine units as well).
8. Fit fillers between fitments, of same material as fitments, where necessary to fill voids between fitments and walls.
9. Corners of countertops that do not butt against a wall or fixed object, shall be rounded with 1" (25 mm) radius corners.
10. Lighting fixtures and outlets to be supplied and installed under Division 16. Provide all necessary cutouts, clearances, etc. for work by Div.16.
11. Provide cutouts and access panels where required for Division 15 and covers over ductwork (stove exhaust fans) or piping that run exposed above counters and upper shelves. Coordinate with Div. 15 for locations and quantities.
12. Provide extended top, bottom, and exposed gables where furring out of upper cupboards is required due to pipes, conduits, and the like behind to provide a flush face at walls.

13. Side splash at counter tops required only when the distance between the side of a sink and the adjacent vertical surface is less than 400mm.
14. Plastic Laminate Work:
 1. Comply with CAN3-A172-M79, Appendix "A".
 2. Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Provide cores of not less than 3/4" (19 mm) nominal thickness solid face Douglas Fir.
 3. Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
 4. Use straight self-edging laminate strip .062" (1.6 mm) thick for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 deg. Do not mitre laminate edges. Curved self edging shall be postformed material or bending grade.
 5. Apply laminate backing sheet to reverse side of core of plastic laminate work. Provide backing sheet of sufficient thickness to compensate for stresses caused by the facing sheet.
 6. Locate joints where indicated, where not indicated at approximately 8'-0" (2440 mm) or 12'-0" (3660 mm) centres also include joints at corners, and changes in superficial area.
 7. Accurately fit decorative laminate together to provide tight, flush, butt joints. Joints in cored panels shall be made with 3" (6 mm) blind splines and draw bolts, one draw bolt for widths up to 6" (150 mm), two or more draw bolts at maximum 18" (450 mm) o.c. for widths exceeding 6" (150 mm).
 8. Keep joints min. 2'-0" (300 mm) from sink cutouts.
 9. Seal the core at joints and exposed edges with sealer.

3. EXECUTION

1. PREPARATION AND PROTECTION

1. Protect work of other trades from damage.
2. Make good any resulting damage, to the satisfaction of the Consultant, at no additional cost to the owner.

2. WORKMANSHIP

1. Fabricate and install work in accordance with the best practice. Finished work shall be free from drag, feathers, slivers or roughness of any kind. Remove machine marks by sanding. Give finished work smooth surfaces, ready for painting or varnish application.
2. Mortise and tenon joints shall be glued and pinned. All panels shall be secured together with specified glued and dowelled method. Glue blind screw all fabricated component work unless otherwise specified. Set surface nails and plug countersunk screws with matching wood plugs. Use screws with cap washers where units with doors are secured to walls behind.
3. Finished woodwork shall be free from bruises, blemishes, mineral marks, knots, shakes and other defects.
4. All metal items such as grilles, tracks, supports, legs, brackets, etc. supplied by other trades shall be built into fitments, paneling, wood doors, etc., in strict accordance with directions of trades supplying such.
5. Furnish rough hardware, nails, expansion shields, screws, brackets and incidentals required to assemble and install the fitments in their proper locations.
6. Fit small scribe moulds or fillers of same materials as fitment to hide or fill voids at walls, partitions ceilings, furrings, exposed tops of millwork units, at base locations where rubber base occurs.
7. Support for Hanging Cabinets and Shelves: All cabinets and shelves shall be supported 1" x 3" (65 mm) hardwood bearers and prevented from tipping with steel angles fastened to top of cabinet or shelf, spaced 36" (900 mm) O.C. and lagged into wall surface. 1" (19 mm) x 2" (44 mm) hardwood rails shall be at top and bottom of cabinet or shelf unit, secured into gables of units and fastened to supporting wall with expansion shields and lag screws.

3. MILLWORK WORKMANSHIP

1. Fitments shall have joints dowelled and all joints shall be glued and nailed or screwed. All cabinet bases shall be of 3/4" plywood, blocked 3'-0" O.C. maximum and at corners.
 2. All plywood used in millwork shall be Oak faced graded for stain finish. Counter tops shall have splash backs where sinks occur.
 3. Laminates shall be pressure bonded to back-up board. Counter tops shall be self-edged and have plastic laminate covered back splash. Back-up material for counter tops shall be waterproof plywood core.
 4. Plastic laminate surface shall be level, without bubbles and core ghosting. Core edges in counter cut outs shall be sealed with asphalt compound. All exposed plastic edges shall be matched and sanded.
4. INSTALLATION
1. Installation and assembly work on the job shall be executed by skilled forces under supervision of a competent joinery foreman.
 2. Furnish rough hardware, nails, expansion shields, screws, brackets and incidentals required to assemble and install fitments in proper locations. Units shall be adequately fastened and secured in place with concealed fixings wherever possible. Include grounds and furring where required.
 3. Fitments shall be installed level, plumb and true and complete in all respects.
 4. Provide smooth surfaces with fastenings sunk and filled over to receive stain and sealer.
 5. Use draw bolts in countertop joints. Two per joint to be Richelieu 516-2G.
 6. At junction of plastic laminate counter, back splash and adjacent wall finish, apply small bead of silicone sealant as per Section 07900 in colour as selected by Architect.
 7. Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.
 8. Commencement of installation implies acceptance of adjacent site conditions and coordination of related work of other sections.

END OF SECTION

1. **GENERAL**

1. **RELATED DOCUMENTS**

1. Drawings and general provisions of the contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this Section.

2. **SUMMARY**

1. This Section includes the following horizontal and trim solid surface product types:

1. Washrooms

2. **DEFINITION**

1. Solid surface is defined as nonporous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

4. **SUBMITTALS**

1. **Product data:**

1. For each type of product indicated.
2. Product data for the following:
 - a. Vanity counter tops

2. **Shop drawings:**

1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.
 - a. Show full-size details, edge details, thermoforming requirements, attachments, etc.
 - b. Show locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.
 - c. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in solid surface.

3. **Samples:**

1. For each type of product indicated.

- a. Submit minimum 6-inch by 6-inch sample in specified gloss.
 - b. Cut sample and seam together for representation of inconspicuous seam.
 - c. Indicate full range of color and pattern variation.
2. Approved samples will be retained as a standard for work.
4. Product data:
 1. Indicate product description, fabrication information and compliance with specified performance requirements.
6. Product certificates:
 1. For each type of product, signed by product manufacturer.
7. Fabricator/installer qualifications:
 1. Provide copy of certification number.
8. Manufacturer certificates:
 1. Signed by manufacturers certifying that they comply with requirements.
5. QUALITY ASSURANCE
 1. Qualifications:
 1. Shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.
 - B. Fabricator / installer qualifications:
 1. Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer.
 - C. Applicable standards:
 1. Standards of the following, as referenced herein:
 - a. American National Standards Institute (ANSI)
 - b. American Society for Testing and Materials (ASTM)

- c. National Electrical Manufacturers Association (NEMA)
 - d. NSF International
 - 2. Fire test response characteristics:
 - a. Provide with the following Class A (Class I) surface burning characteristics as determined by testing identical products per UL 723 (ASTM E84) or another testing and inspecting agency acceptable to authorities having jurisdiction:
 - 1) Flame Spread Index: 25 or less.
 - 2) Smoke Developed Index: 450 or less.
- D. Coordination drawings:
 - 1. Shall be prepared indicating:
 - a. Plumbing work.
 - b. Electrical work.
 - c. Miscellaneous steel for the general work.
 - d. Indicate location of all walls (rated and non-rated), blocking locations and recessed wall items, etc.
 - 2. Content:
 - a. Project-specific information, drawn accurately to scale.
 - b. Do not base coordination drawings on reproductions of the contract documents or standard printed data.
 - c. Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements.
 - d. Provide alternate sketches to designer for resolution of such conflicts.
 - 1) Minor dimension changes and difficult installations will not be considered changes to the contract.
- E. Drawings shall:
 - 1. Be produced in 1/2-inch scale for all fabricated items.
- F. Drawings must be complete and submitted to the architect within 60 days after award of contract for record only.

1. Coordination drawings are required for the benefit of contractor's fabricators/installers as an aid to coordination of their work so as to eliminate or reduce conflicts that may arise during the installation of their work.

G. Job mock-up:

1. Prior to fabrication of architectural millwork, erect sample unit to further verify selections made under sample submittals and to demonstrate the quality of materials and execution.
3. Build mock-up to comply with the contract documents and install in a location as directed by the Design-Builder
4. Notify the architect two weeks in advance of the date of when the mock-up will be delivered.
5. Should mock-up not be approved, re-fabricate and reinstall until approval is secured.
 - a. Remove rejected units from project site.
6. After approval, the mock-up may become a part of the project.
7. This mock-up, once approved, shall serve as a standard for judging quality of all completed units of work.

H. Pre-installation conference:

1. Conduct conference at project site.

6. DELIVERY, STORAGE AND HANDLING

- A. Deliver no components to project site until areas are ready for installation.
- B. Store components indoors prior to installation.
- C. Handle materials to prevent damage to finished surfaces.
 1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

7. WARRANTY

- A. Provide manufacturer's warranty against defects in materials.
 1. Warranty shall provide material and labor to repair or replace defective materials.

2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

B. Warranty period:

1. Two years from date of substantial completion.

8. MAINTENANCE

- A. Provide maintenance requirements as specified by the manufacturer.

2. PRODUCTS

1. MANUFACTURERS

1. Manufacturers:

1. Subject to compliance with requirements, provide products by one of the following:
 - a. SS-1: Corian countertop with integrated Accessible 810 sinks; Countertop colour to be White Jasmine, polished. Sink colour to be Designer White.
 - b. acceptable alternate / equal by LG Hausys, Formica, or Wilsonart.

2. MATERIALS

A. Solid polymer components:

1. Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.
2. Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.

B. Thickness:

1. 1/2 inch

C. Performance characteristics:

Property	Typical Result	Test
Tensile Strength	6,000 psi	ASTM D 638
Tensile Modulus	1.5 x 10 ⁻⁶ psi	ASTM D 638
Tensile Elongation	0.4% min.	ASTM D 638
Flexural Strength	10,000 psi	ASTM D 790

Flexural Modulus	1.2 x 10 ⁻⁶ psi	ASTM D 790
Hardness	>85	Rockwell "M" Scale ASTM D 785
	56	Barcol Impressor ASTM D 2583
Thermal Expansion	3.02 x 10 ⁻⁵ in./in./°C (1.80 x 10 ⁻⁵ in./in./°F)	ASTM D 696
Gloss (60° Gardner)	5-75 (matte—highly polished)	ANSI Z124
Light Resistance	(Xenon Arc) No effect	NEMA LD 3-2000
Wear and Cleanability	Passes	Method 3.3 ANSI Z124.3 & Z124.6
Stain Resistance: Sheets	Passes	ANSI Z124.3 & Z124.6
Fungus and Bacteria Resistance	Does not support microbial growth	ASTM G21 & G22
Boiling Water Resistance	No visible change	NEMA LD 3-2000 Method 3.5
High Temperature Resistance	No change	NEMA LD 3-2000 Method 3.6
IZOD Impact Strength (Notched Specimen)	0.28 ft.-lbs./in. of notch	ASTM D 256 (Method A)
Ball Impact	No fracture—1/2 lb. ball:	NEMA LD 3-2000
Resistance: Sheets	1/4" slab—36" drop 1/2" slab—144" drop	Method 3.8
Weatherability	ΔE* ₉₄ <5 in 1,000 hrs.	ASTM G 155
Specific Gravity †	1.7	
Water Absorption	Long-term 0.4% (3/4") 0.6% (1/2") 0.8% (1/4")	ASTM D 570
Toxicity	99 (solid colors) 66 (patterned colors)	Pittsburgh Protocol "LC50" Test
Flammability	All colors (Class I and Class A)	ASTM E 84, NFPA 255 & UL 723
Flame Spread Index	<25	
Smoke Developed Index	<25	

† Approximate weight per square foot: 1/4" (6 mm) 2.2 lbs., 1/2" (12.3 mm) 4.4 lbs.
 Shapes meet or exceed the ANSI Z124.3 and ANSI Z124.6 standards for plastic sinks and
 lavatories.

NEMA results based on the NEMA LD 3-2000

3. ACCESSORIES:

A. Joint adhesive:

1. Manufacturer's standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.

B. Sealant:

1. Manufacturer's standard mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

4. FACTORY FABRICATION

A. Shop assembly

1. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed instructions and technical bulletins.
2. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints.
 - a. Reinforce with strip of solid polymer material, 2" wide.
3. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
4. Rout and finish component edges with clean, sharp returns.
 - a. Rout cutouts, radii and contours to template.
 - b. Smooth edges.
 - c. Repair or reject defective and inaccurate work.

5. FINISHES

- A. Color to be selected from the manufacturer's standard color chart.

B. Finish:

1. Provide surfaces with a uniform finish.

3. EXECUTION

1. EXAMINATION

- A. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

2. INSTALLATION

- A. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.

- 1. Provide product in the largest pieces available.
- 2. Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work.
 - a. Exposed joints/seams shall not be allowed.
- 3. Reinforce field joints with solid surface strips extending a minimum of 1 inch on either side of the seam with the strip being the same thickness as the top.
- 4. Cut and finish component edges with clean, sharp returns.
- 5. Rout radii and contours to template.
- 6. Anchor securely to base cabinets or other supports.
- 7. Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop.
- 8. Carefully dress joints smooth, remove surface scratches and clean entire surface.
- 9. Install countertops with no more than 1/8-inch (3 mm) sag, bow or other variation from a straight line.

B. Coved backsplashes and applied side splashes:

- 1. Install applied side splashes using manufacturer's standard color-matched silicone sealant.
- 2. Adhere applied side splashes to countertops using manufacturer's standard color-matched silicone sealant.

3. REPAIR

- A. Repair or replace damaged work which cannot be repaired to architect's satisfaction.

4. CLEANING AND PROTECTION

- A. Keep components clean during installation.

- B. Remove adhesives, sealants and other stains.

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Conform to sections of Division 1 as applicable.

2. **DESCRIPTION**

1. **Description of Work**

1. The work of this section shall be comprised of the fabrication, supply and installation of pre-fabricated metal wall system as indicated on drawings and as specified herein. The specifications and drawings pertaining to this section's work are to portray the general design and particular building requirements. The Contractor will be responsible to ensure that the finished insulated metal wall system product meets or exceeds the general design requirements and finished usage of the building as specified herein.
2. The Contractor in conjunction with the metal wall system Manufacturer will be required to ensure that the Metal wall cladding and their components are designed, engineered, adapted as required to satisfy the general design as indicated herein without significantly altering details, measurements, clearances, etc., while allowing for the proper installation of work of all other sections.

2. **Work Included**

1. Preformed Metal wall cladding, caps, fascia, closures, flashings, miscellaneous trim
2. All subgirts (singular and bi-directional), support framing back to structure, spacers, clips and fasteners.
3. Sealants.

3. **SUBMITTALS**

1. **Shop Drawings**

1. Submit shop drawings in accordance with Section 01300.
2. Indicate dimensions, siding and soffit profiles, attachment methods, anchorage details for preformed insulated metal wall system, framed openings, accessories, reveals and control joints, schedule of wall elevations, trim and closure pieces, loadings, fasteners and related work.

3. Indicate arrangement of prefinished metal cladding sheets including joints, types and location of supports, fasteners, and any special shapes.
4. Fully detail membrane air/vapour barrier, thermal barrier, insulation, corner details, flashings at top and bottom of walls, and all other components in the system.
5. Indicate detailed description of mechanical, electrical and other systems in work.
6. Describe requirements of other systems of components related to this work but provided by others. Obtain necessary information required to detail this work including methods of integration and securing.

2. Samples

1. Submit samples according to Section 01300 and as follows:
 1. Submit preliminary 8" x 12" (200mm x 300mm) or larger colour sample of each prefinished metal panel.
 2. Submit interlocking panel assembly approximately 3'-0" x 3'-0" (900 mm x 900 mm) in size of all fabricated materials forming a part of the insulated metal wall system. Show weatherproof sealed exterior and interior joints.

4. DESIGN AND PERFORMANCE REQUIREMENTS

1. Appearance: exposed fasteners approved by the Architect; exposed surfaces free of distortion, twist, waves and buckles.
2. Structural Loads: resist positive and negative wind pressures expected in this geographical area with a maximum allowable deflection of 1/180 of span. Components shall not vibrate when subjected to the effects of wind.
3. Moisture Control: prevent infiltration of water and snow into siding system. Provide means of draining space between insulation and exterior skin, in accordance with NRC Rain Screen Principles and drawing details.
4. Thermal Movement: accommodate expansion and contraction of component parts without causing buckling, failure of joints seals, undue stress on fasteners and other detrimental effects.
5. Structural Movement: accommodate movement between siding system and building structure caused by structural movement, without permanent distortion, racking of joints, breakage of seals or water penetration.

5. QUALITY ASSURANCE

1. Qualification of Manufacturer

1. Preformed metal shall be installed by manufacturer's construction forces or by an accredited erector under direct control and responsibility of manufacturer.

2. Requirements of Regulatory Agencies

1. In addition to requirements of authorities having jurisdiction carry out insulated metal wall system work in accordance with the latest edition of the following specific applicable requirements of following:
 1. Latest Ontario Building Code, as currently amended,
 2. CAN 3-S136
 3. Applicable publications by Canadian Sheet Steel Building Institute.

6. WARRANTY

1. Warrant work of this section against defects or deficiencies for a period of five (5) years from date work is certified as substantially performed in accordance with GC 24 of General Conditions of the contract.
2. The Contractor hereby warrants that the metal wall system enclosure will be water and weathertight, structurally sound and free from distortion; that the exterior finish will not craze, peel, corrode or discolour; that the exterior cladding will not develop excessive fading or non-uniformity of colour, and will be free from blemishes or distortion due to thermal movement of the wall or normal movements of the building structure; that the gaskets, tape and sealants will be free from deterioration from sunlight, weather or oxidation and from permanent deformation and free from leaks under load.

7. PRODUCT DELIVERY, STORAGE AND HANDLING

1. Provide necessary crating, or bundling for shipment of components to site including protection against weather.
2. Protect prefinished steel sheet during fabrication, transportation, site storage and installation in accordance with CSSBI Sheet Steel Fact #3, January 2014.
3. Store materials flat at Site under protection to prevent staining from the

ground or from collection of water on material, or both; and secure against wind damage. Provide air circulation around finished metal surfaces. Store insulation and adhesives in dry areas, heated as required to prevent damage to adhesives.

4. Handle and protect galvanized materials from damage to zinc coating.

2. **PRODUCTS**

3. **MATERIALS**

1. **Prepainted Sheet Steel:**
 1. Base metal: hot dipped zinc coated (galvanized) sheet steel meeting requirements of ASTM A653.
 2. Colour to be selected by Architect to match existing from Vic West full range including premium and custom colours. Maximum ten (4) colours to be selected.
 3. Profile for prefinished metal siding to be;
 1. Vicwest AD 300 installed vertically.
3. **Subgirts, Clips, Spacers:** minimum 1.2 mm thick formed galvanized steel; ASTM 446 Grade A, zinc coating designation Z275.
4. **Fastening Devices:** stainless or cadmium plated; colour match exposed fasteners with metal on which they occur.
5. **Insulation:** Air/Vapour Barrier and rigid insulation in conference with Insulation - Section 07213.
6. **Closures:** as recommended by manufacturer at all exposed locations.
7. **Bituminous Paint:** Best grade, quick drying, non-staining alkali resistant asphalt utility enamel.
8. **Sealants:**
 1. **Concealed Locations:** tape or compound, non-skinning, non-drying, butyl rubber.
 2. **Exposed Locations:** Spectrem 1 by Tremoco or approved equal one part silicone sealant to CGSB 19.13-M87.
 3. **Primer:** as recommended by sealant manufacturer.

3. FABRICATION

2. Unless otherwise indicated use minimum 0.030" (0.76mm) core thickness sheet metal, tension levelled.
3. Spacer of Girt System: galvanized steel girt anchor or clip system designed to meet performance requirements specified. Design system to minimize direct heat transfer; avoid direct metal to metal contact wherever possible.
4. Finished exposed surfaces shall be prepainted steel, smooth and plain.
5. Flashings, Trim, Closures: fabricated to profiles indicated and as required to meet design and performance requirements. Use preformed corner pieces only. Use same material as exterior skin where exposed. Use galvanized sheet steel in concealed locations. Double back exposed edges.

3. EXECUTION

2. PREPARATION

2. Prior to start of erection, examine existing work and report to Architect any unsatisfactory conditions.
3. Coordinate installation of fibre glass thermal spacers with Section 07213 and existing site conditions. Provide secondary steel framing for support of metal siding and soffit system, where such framing is required but not provided by structural steel Section. Install secondary framing in accordance with applicable requirements of CAN3-S16. 1 and CAN3-S136.

3. ERECTION

2. Install siding system in accordance with manufacturer's directions and as detailed on drawings.
3. Prior to installing subgirts/spacers to support work Spray-on insulation/air barrier Contractor to install vapour barrier and air barrier membranes. (by Sections 07213, 07214 and 04200)
4. Fasten subgirts/spacers and suspended metal soffit furring to supporting work. Provide additional framing at terminations, openings and penetrations.
5. Allow semi-rigid Insulation Contractor to install semi-rigid insulation prior to installing exterior skin.
6. Install exterior wall and soffit skin with all joints accurately aligned and tight fitting.

7. Provide sealants, flashings, closures, covers and trim as indicated and as required to render work complete and finished in accordance with specified requirements. Install sealants in accordance with Section 07900, Sealants. Install all reinforced flexible membrane flashings and pre-finished metal drip flashings as detailed.
 8. Coordinate installation of metal siding and soffit with all other Trade Contractors working in the surrounding area.
 9. Leave metal siding and soffit systems in clean and neat condition.
4. TOUCH-UP AND CLEANING
2. Touch-up minor paint abrasions with matching touch-up paint.

END OF SECTION

1. GENERAL

1. GENERAL REQUIREMENTS:

1. Division One, General Requirements, is a part of this Section and shall apply as if repeated here.

2. REFERENCES:

1. ASTM A563/A563M-97 Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip process.
2. ASTM A591/A591M-89 Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications.
3. ASTM A606-96 Specification for Steel Sheet and Strip, Hot-Rolled and Cold-Rolled, High Strength, Low Alloy, with Improved Atmospheric Corrosion Resistance.
4. ASTM A792/A792M-96 Specification for Steel Sheet, Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
5. ASTM D523-89 (1991)e1 Specular Gloss.
6. ASTM D822-96 Recommended Practice for Conducting Tests on Paint and Related Coatings and Materials Using Filtered Open-Flame Carbon-Arc Exposure Apparatus.
7. CSA A123.3-M1979 Asphalt or Tar Saturated Roofing Felt.
8. CSA B111-1974 Wire Nails, Spikes and Staples.
9. CAN/CGSB-37.5-M89 Cutback Asphalt Plastic Cement.
10. CAN/CGSB-51.32-M77 Sheathing, Membrane, Breather Type.
11. Canadian Roofing Contractors Association (CRCA).

3. SUBMITTALS:

1. Submit shop drawings in accordance with Section 01300 - Submittals.
2. Submit duplicate 50 x 50 mm samples of each type of sheet metal material, colour and finish.
3. Submit manufacturer's full colour range for Architect's selection for all pre-finished sheet metal.

2. PRODUCTS

1. SHEET METAL MATERIALS:

1. Zinc coated steel sheet: 24 ga. 0.6 mm core nominal thickness, commercial quality CS type (A) to ASTM A653/A653M, with Z275 designation zinc coating.
2. Aluminum-zinc alloy coated steel sheet: to CSSBI 201M-84 commercial quality, grade with AZ150 coating, regular spangle surface, 24 ga. 0.6 mm base metal thickness, not oiled.

2. PREFINISHED STEEL SHEET:

1. Prefinished steel to CAN/CGSB 93.3-M91 with factory applied polyvinyl chloride.
 1. Class F1S.
 2. Prefinished with 0.200 mm thick polyvinyl chloride paint on exposed side and 0.005 mm thick epoxy primer on concealed side.
 3. Colours to match wall below. Confirm with Architect prior to ordering of material.
 4. Specular gloss: 30 units +/- 5 in accordance with ASTM D523.
 5. Coating thickness: not less than 200 micrometers.
 6. Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20% to ASTM D822 as follows:
 1. Outdoor exposure period 5000 hours.
 2. Humidity resistance exposure period 5000 hours.

3. ACCESSORIES:

1. Isolation coating: alkali resistant bituminous paint.
2. Plastic cement: to CAN/CGSB-37.5.
3. Underlay for metal flashing: dry sheathing to CAN/CGSB-51.32 asphalt laminated 3.6 to 4.5 kg kraft paper No. 15 perforated asphalt felt to CSA

A123.3.

4. Sealants: 1 part acrylic, high molecular weight polymer flexible sealant Dymonic as manufactured by Tremco Ltd. in colours to match the flashing colours.
 5. Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness 0.8 mm.
 6. Fasteners: of same material as sheet metal, to CSA B111, galvanized steel spiral thread, nailing disc, nails of length and thickness suitable for metal flashing application, minimum 25 mm into nailing substrate.
 7. Washers: of same material as sheet metal, 1 mm thick with rubber packings.
 8. Screws: o. 305 stainless steel, self-tapping hexagonal head, neoprene washer and lead expansion shield.
 9. Wedges: high impact polypropylene or rolled lead, 24 mm x 76 mm, tapered 1.6 mm to 6.4 mm.
 10. Joint Filler: extruded polyethelane, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, oversized 30 to 50%, CFC free.
 11. Touch-up paint: as recommended by prefinished material manufacturer.
4. FABRICATION:
1. Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA as indicated to conform to CRCA 'FL' series details.
 2. Fabricate aluminum flashings and other sheet aluminum work in accordance with Aluminum Association Aluminum Sheet Metal Work in Building Construction.
 3. Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.
 4. Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.
 5. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
 6. Apply isolation coating to metal surfaces to be embedded in concrete or

mortar.

7. Extend all parapet metal flashings, complete with hemmed edge, to toe of roofing cants.

5. METAL FLASHINGS:

1. Form flashings to profiles indicated of 24 ga. 0.6 mm thick prefinished steel.

3. **EXECUTION**

1. INSTALLATION:

1. Install sheet metal work in accordance with CRCA FL series details, FL 1, 2, 5, 11, 12, 13, 14, 15, 23, 126, 17 and as detailed.
2. Use concealed fastenings except where approved before installation.
3. Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
4. Lock end joints and caulk with sealant.
5. Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm. Lead wedge flashing securely into joint.

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements, is a part of this section and shall apply as if repeated here.

2. **SYSTEM DESCRIPTION**

1. Supply all labour, materials and equipment necessary for the complete work of this Section as indicated on the drawings, specified herein, or as required by job conditions and normally considered as work covered by this Section.
2. The term "sealant" to be synonymous with the term "caulking" where used on the drawings and/or specifications.

3. **SUBMISSIONS**

1. Submit complete colour samples for Architect's approval.
2. Supply a sample container of each type of caulking or sealant.
3. Sample joints of each type and colour of caulking shall be prepared at the site in a location directed by the Architect and be approved by the Architect before work commences. Approved joints will represent minimum acceptable for the work.
4. Cure samples and under conditions anticipated at job site during construction.

4. **ENVIRONMENTAL CONDITIONS**

1. Sealant and substrata materials to be minimum 5 C (41 deg. F.).
2. If necessary to apply sealants below 5 C., consult sealant manufacturer and follow their recommendations.

5. **DELIVERY AND STORAGE**

1. Deliver and store materials in manufacturer's original wrappings and containers.

6. **PROTECTION**

1. Mask adjacent surfaces as necessary to prevent contamination.
2. Protect all sealant against puncture or damage until sealant has attained its final set.

3. Be responsible for any damage to adjacent surfaces caused by the work of this Section. Provide extra protection as required when sandblasting.
4. Provide temporary covers over joints where joints have been cleaned out, but not yet caulked.

7. WARRANTY

1. Provide a written warranty, signed and issued in the name of the Client stating that caulking work of this section is guaranteed against leakage, cracking, crumbling, melting, shrinkage, running, loss of adhesion, or staining adjacent surfaces, for a period of five years from the date of Substantial Certificate of Completion and that any defective caulking will be replaced.
2. At completion of the work, provide a written statement from the manufacturer or authorized manufacturer's representative that material used in the various applications is the recommended one and that the final application is as recommended by the manufacturer for the construction conditions detailed and for the performance required. These requirements are applicable to every material included in the work of this Section.

8. QUALIFICATIONS

1. Applicator for the work of this section shall:
 1. Be approved by the materials manufacturer and Architects.
 2. Have at least five years proven satisfactory experience in this type of work.
 3. Have adequate equipment and skilled personnel to expediently complete the work of this section in an efficient and very best workmanlike manner.
 4. Be completely familiar with the published recommendations of the manufacturer of the caulking material being used.
2. Indication of lack of skill or defective work to be sufficient grounds for the Consultant to reject the installed caulking and to require its immediate removal and complete recaulking at no additional cost to the Client during the guaranty period.
3. Co-operate with the Consultant and/or any inspection and testing agency he may appoint.
4. Materials to be utilized shall be inspected and tested as required.

5. Provide cut tests of 6 inches in length in order to ensure correct thickness, hardness, mixing and surface finish. Provide these cut test samples at times and from locations as directed by the Consultant, and make good the areas from which the samples are taken.
6. All tests of the sealant installation shall be inspected by the sealant manufacturer's representative.

2. PRODUCTS

1. MATERIALS

1. Primers: type recommended by sealant manufacturer.
2. Joint Fillers:
 1. General: compatible with primers and sealants, oversized 30 to 50%.
 2. Polyethylene: extruded closed cell foam, Shore A hardness 20, tensile strength 140 to 200 kPa.
3. Bond Breaker: pressure sensitive plastic tape, which will not bond to sealants.
4. Sealant Type A: Equal three part polyurethane 'Tremco Dymeric 240' conforming to C.G.S.B. CAN2-19-24-M80. Colours to be tinted to specifically match wall colours. Maximum of five colours.
5. Sealant Type B: One part silicone mildew resistant type equal to sanitary sealant 1702 by C.G.E. Silicones and conforming to CGSB 19-GP-22m or Dow Corning 786.
6. Sealant Type C: Equal to Sikaflex - 15 LM. Colours to be tinted to specifically match wall colours. Maximum of six colours.
7. Colour of Sealants: to be selected by the Architect. Colours of sealant to change where wall colours change (i.e. banding).
8. Joint Cleaner: xylol, methylethyleketon or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.
9. Vent Tubing: 6 mm (1/4") inside diameter extruded polyvinyl chloride tubing.
10. Threshold Bedding: oil base caulking compound, to CGSB 19-GP-6.
11. Deliver materials to job site in sealed containers with manufacturer's original labels attached, and accompanied by certification of

compliance with the specifications.

3. EXECUTION

1. EXAMINATION

1. Examine all surfaces prior to application and notify the Architect of any conditions detrimental to satisfactory application.
2. Commencement of work shall imply acceptance of surfaces.

2. PREPARATION

1. Use a dry, clean, oil free compressed air stream to remove dust and other contaminants. Masonry surfaces shall be cleaned with wire brush and then blown clean. Any waterproofing treatments contaminating the joint must be completely removed.
2. Remove rust, mill scale and coatings from ferrous metals by wire brush, grinding or sandblasting.
3. Remove oil, grease and other coatings from non-ferrous metals with joint cleaner.
4. Prepare concrete, masonry, glazed and vitreous surfaces to sealant manufacturer's instructions.
5. Examine joint sizes and correct to achieve depth ratio $\frac{1}{2}$ of joint width with minimum width and depth of 6 mm ($\frac{1}{4}$ "), maximum width 25 mm (1").
6. Before caulking, fill spaces deeper than 13 mm ($\frac{1}{2}$ ") with bedding material, packed tightly in place and set below finished surfaces to suit specified sealant depth. Provide joints less than 13 mm ($\frac{1}{2}$ ") deep with an approved joint breaker.
7. Where necessary to prevent staining, mask adjacent surfaces with tape prior to priming and caulking.
8. Apply bond breaker tape where required to manufacturer's directions.
9. Prime sides of joints to sealant manufacturer's instructions immediately prior to caulking.
10. Remove all existing caulking and prepare for replacement.
11. Check form release agent used on concrete for compatibility with sealant and primer. If they are incompatible inform Consultant and change sealant to compatible type approved by Consultant or clean concrete to

Architect's approval.

3. APPLICATION

1. Before application of any sealants, confirm that sealant material is compatible with the materials and finishes of the surfaces to which the material is applied or is in contact with.
2. Apply sealants, primers, joint fillers, bond breakers, to manufacturer's instructions. Apply sealant using a gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.
3. Thoroughly mix caulking materials with a mechanical mixer capable of mixing at 80-100 rpm without mixing air into the material. Mix material in accordance with the manufacturer's directions and instructions.
4. Install caulking to the joints using manually operated or power operated guns. Use nozzles of the correct size and shape and provide sufficient pressure to completely fill the joints and make adhesive contact with the backs and sides of the joints. Caulk solidly around entire perimeter of openings.
5. Finish the surface of the caulking with a smooth, full bead, free from ridges, wrinkles, sags, air pockets and embedded impurities. Tool the finish bead with a water wet or dry tool as recommended by the manufacturer, to a slightly concave joint.
6. In masonry cavity construction, vent caulked joints from cavity to 3 mm (1/8") beyond external face of wall by inserting vent tubing at bottom of each joint and maximum of 1500 mm (5'-0") o.c. vertically. Position tube to drain to exterior.
7. Clean adjacent surfaces immediately and leave work neat and clean. Remove excess sealant and droppings using recommended cleaners as work progresses. Remove masking after tooling of joints. Finish work damaged due to this work shall be replaced at this contractor's expense to satisfaction of the Architect.
8. Set thresholds in a full bed of caulking compound at least 1/2" (12 mm) thick. Remove excess compound after threshold is set and neatly point joints.
9. All hidden joints or joints concealed by metal covers occurring in window and door frames, metal curtainwalls, other locations, to be clean, sealant applied and tooled, and inspected and approved prior to the installation of metal covers.

10. Use of sealants specified in the following locations:
 1. Type A: Use at all exterior locations and interior control joints.
NOTE: this sealant **must not be** painted over.
 2. Type B: Joints door frames and at all high humidity locations.
 3. Type C: At all remaining interior locations.

4. LOCATIONS

1. Do all caulking required (except where specified under other sections).
2. Caulk exposed control joints occurring in masonry walls. (See item 3.6)
3. Caulk along underside of projecting flashings, except at roof eave detail.
4. Caulk joints between siding, window or door frames to adjacent building components around perimeter of every external window or door opening at interior and exterior sides.
5. Caulk around exterior louvres.
6. Set window sills in a bed of caulking compound by Sections 08400 and 08900.
7. Interior hollow metal where it abuts interior finishes.
8. Caulk where shown on drawings and not specified in other sections.
9. Caulking elsewhere to provide a water and weatherproof condition.
10. Caulk areas on interior walls to stop air infiltration.
11. Caulk around access panels, built-in specialties, grilles, pipes, ducts, conduit, outlet boxes, etc. penetrating exterior walls.

5. CAULKING NOT TO BE DONE UNDER THIS SECTION

1. Caulking of Roofing - Section 07500
2. Caulking of Metal Flashings - Section 07620
3. Caulking of Vapour Barrier - Section 07910
4. Caulking and sealants for glazing - Section 08800

6. CAULKING OF MASONRY CONTROL JOINTS

1. Caulk all Masonry Control Joints where shown on drawings. Refer to exterior elevations or as specified.
2. In addition to locations noted in item a. above, allow for the following additional linear quantities for Caulking of interior concrete block control joints, as per drawings as follows:
 - .1 50 lineal metres of caulking complete with backer rod.

NOTE: Linear quantity based on one side.

NOTE: Verification of linear quantities of control joints to be made later. Locations of all additional required joints to be finalized later after submission of proposed control joint locations on shop drawings to be submitted by Masonry Contractor as required by Specifications Section 04200.

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements is part of this Section and shall apply as if repeated here.

2. **SHOP DRAWINGS**

1. Submit shop drawings in electronic PDF format in accordance with GC 3.10 of CCDC Document 2, 2008 and Section 01300 – Submittals.
2. Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings, finishes and fire ratings.
3. Fire Ratings indicated on Door Finish Schedule are minimums. If door design cannot be satisfied at specified rating (i.e. 20 min), supply door or frame with acceptable higher rating (i.e. 45 min.).

3. **QUALIFICATIONS OF MANUFACTURER**

1. Products used in the Work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.
2. Only steel hollow metal doors and frames manufactured by members of the Canadian Steel Door and Frame Manufacturer's Association (CSDFMA) are eligible for use on this project.
3. Qualified Manufacturers:
 1. S. W. Fleming
 2. Baron
 3. Daybar
 4. Artek
 5. Trillium
 6. Vision Hollow Metal
4. All other manufacturers to submit for approval a minimum seven (7) days prior to tender closing.

4. **PROTECTION**

1. Use all means necessary to protect materials of this Section before, during and after installation and to protect installed work & materials of all other trades.

5. REPLACEMENTS

1. In the event of damage, immediately make all repairs & replacements necessary to the approval of the Architect and at no additional cost to the Owner.

6. WORK INCLUDED

1. Supply all hollow metal doors, frames and screens as shown on drawings and on door schedule.
 1. Provide removable mullions where indicated. Refer to door and frame schedule.
2. Supply and install all hollow metal fire doors, frames and screens shown on the drawings and on door schedule.
 1. Door cutouts, complete with reinforcing, stops, and closures required for glazing.
 2. Cut outs and reinforcing for finishing hardware including preparations for mortice type hardware.
 3. Cutouts for security system. Coordinate with Div.16.
3. Supply all necessary fastening and anchoring devices for above items.
4. Supply and install door grilles where indicated on drawings or sizes as indicated on the drawings. Refer also to Div.15.

7. STANDARDS

1. Materials and workmanship to be in accordance with Canadian Steel Door and Frame Manufacturer's Association Specifications Standards for steel doors and frames.

8. REGULATORY REQUIREMENTS

1. Supply fire labelled steel doors and frames in accordance with NFPA-80, current edition, except where specified otherwise.

2. PRODUCTS

1. MATERIALS

Steel: cold rolled steel, double annealed patent levelled, fully pickled and free from scale and internal defect. Surfaces shall be free from perceptible waves, buckles and other imperfections.

1. Zinc Coating: wipe coated galvanizing in conformance with ASTM 527, Coating Class A01.
 2. Primer for Touch-Up: conforming to CGSB 1GP-181M.
 3. Labels: Provide ULC or Warnock-Hersey Labels for doors and frames as per Door Schedule.
 4. Thermal Break: Polyvinyl Chloride (PVC) thermal break.
 5. Reinforcing Channel: to CAN/CSA - G40.21-M7, grade 300W, 3.25 mm.
 6. Glass for Hollow Metal Doors: as per 08800 Glass and Glazing Section.
 7. Glass for Hollow Metal Frames and Screens: as per 08800 Glass and Glazing Section.
2. FABRICATION
1. Generally
 1. Fit and assemble work in shop where possible. Execute according to details and approved shop drawings. Where shop fabrication is not possible, make trial assembly in shop.
 2. Weld all components of doors and frames. File or grind exposed welds smooth and flush. Exposed welds shall be continuous. Knock-down frame not to be used on this project.
 3. Workmanship shall be best grade modern shop and field practice known to recognized manufacturers specializing in this work. Joints and intersecting members accurately fitted made in true planes with adequate fastening.
 4. Insulate where necessary to prevent electrolysis between metal to metal or metal to masonry or concrete.
 5. Fabricate and erect work square, plumb, straight, true and accurately fitted. Provide adequate reinforcing and anchorage.
 6. Clean, scrape and remove rust, mill scale, grease or extraneous material from frames and doors following fabrication. Flood coat with air-drying paste filler and again sand to eliminate all unevenness or irregularities. Apply in shop a full smooth coat of zinc chromate primer to all surfaces. Deliver work to site with primer undamaged and otherwise satisfactory for following work specified in Section 09900.

2. Doors

1. Provide hollow metal doors of type and size indicated on Door Schedule, and as detailed on Drawings.
2. Construct flush type continuously welded exterior doors conforming to ASTM A527 16 gauge (1.613 mm) hollow metal construction, steel stiffened with vertical steel ribs, all voids filled with semi-rigid fibrous insulation minimum density 24 kg/m³ polystyrene polyurethane and complete with top and bottom caps. Finish shall be "wipe coat" galvanized steel.
3. Construct interior slab and stile and rail type doors and panels of 18 gauge (1.311 mm) cold rolled, roller levelled sheet "wipcoat" galvanized steel with honeycomb structural core consisting of pre-expanded, resin impregnated Kraft paper having 3/4" (20 mm) cell size to thickness indicated.
4. Provide 16 gauge (1.613 mm) continuously welded interior doors, reinforced with interior stiffeners at all corridor, washrooms, change rooms and Gymnasium and elsewhere where indicated on drawings and Door Schedule. Interior Stiffeners: for steel doors and panels, spot weld interior stiffeners at 150 mm (6") o.c. maximum to face sheets. Laterally stiffen steel doors at top and bottom by continuous channels securely welded to both face sheets.
5. Doors shall be mortised, reinforced, drilled and tapped to receive templated hardware including mortise type hardware. Reinforce for surface mounted hardware.
6. Prepare doors to receive glass or grilles as required. Provide removable stops secured with countersunk tamperproof head screws at 6" (150 mm) o.c. Prepare exterior doors to receive 1" (25 mm) thick insulated sealed glass units.
7. Weld door and panel components together to provide integrated units, square, true and free from distortion or waves. All 18 gauge doors to have welded seams minimum 30% overall and 2" (50 mm) length welds. Weld above and below all hinge locations. All 16 gauge doors to be continuously welded. Grind and fill smooth welded seam.
8. Door head and bottom shall have channel shaped member, closing off top and bottom of door flush with face skins. NOTE: close off top and bottom of exterior doors even with outer edge of door.

3. Fire Rated Doors

1. Provide doors, frames and hardware with Underwriters Laboratories of Canada (ULC) labels, clearly visible, where required to be fire rated or installed in fire rated assembly.

4. Door and Screen Frames

1. Provide steel hollow metal door and window frames for openings indicated on Door Schedule and as detailed elsewhere on drawings.
2. Form interior hollow frames to profile indicated of 16 U.S. gauge (1.613 mm) hot rolled "wipe coat" zinc coated steel. Construct exterior frames of 16 U.S. gauge (1.613 mm) hot rolled, zinc coated steel.
3. Cut mitres and weld corners continuously along inside frame profile. Fill corners of steel frames with metallic paste filler and sand smooth and uniform. Do not weld corner of removable stop.
4. Provide 10 gauge (3.51 mm) channel stiffeners in mullions each side of door openings occurring in screens, or as required to provide a rigid installation.
5. Prepare removable stops secured with counter-sunk tamperproof screws at 6" (150 mm) o.c.
6. Provide three (3) neoprene single stud bumpers for each interior door frame and (2) bumpers at head for pairs of doors.
7. Prepare frames for mortise type hardware at all doors except panic hardware locations at exterior doors, stair doors, corridor cross doors, gym doors and library doors. Blank, reinforce for butts with 1/4" (6.35 mm) steel plate, drill and tap as required. Reinforce both sides of every door closer, provide for concealed door closers where required.
8. Cover reinforcement plates or attachments and cut-outs with 22 gauge (0.853 mm) steel sheet boxes to protect against mortar. Provide channel or angle spreaders readily removable.
9. Provide adjustable "Tee" or wire masonry anchors with head of No. 6 gauge (4.94 mm) steel and body of 10 gauge (3.510 mm) corrugated steel where frames are built into masonry, except at thermal broken frames. Provide manufacturer recommended anchor at all other locations.
10. Supply three anchors for jambs between 4'0" (1219 mm) and 7'0"

(2134 mm) and four anchors for jambs exceeding 7'0" (2134 mm) high. Adjustable type shall be as recommended by manufacturer. Provide adjustable jamb anchors for fixing at floor.

11. Provide head reinforcement in frames wider than 4'-0" (1200 mm) and where indicated or recommended by manufacturer.
12. Prepare frames for electric hardware and security systems. Reinforce and drill and tap frames as required. Coordinate with Div.16.
13. Prepare frames for continuous door length type hinges where indicated on door schedule.
14. Provide 12 gauge (2.66 mm) reinforcing in frames for continuous door length type hinges where indicated on door schedule.
15. Provide removable mullions where indicated on door frame schedule.

5. Metal Panels and Closures

1. Provide 16 U.S. gauge (1.6 mm) hot rolled zinc coated steel closures (at corners and/or between frames) and panels as indicated and detailed on drawings.

3. **EXECUTION**

1. INSTALLATION

1. Frame Installation:

1. Allowable limit of distortion shall be 1/16" (1.5 mm) out of plumb each jamb, measured on face of frame, resulting in maximum twist of frame of 1/8" (3 mm) measured diagonally from upper to lower corner.
2. At masonry walls: install frames using the corrugated or wire masonry anchors. At preformed openings and exterior thermally broken doors use machine screws and expansion anchors as provided for this application. After installation, fill countersunk screw heads flush with frame and sand smooth ready for painting. Fill exterior frames with spray-on insulation by Section 07215. Co-operated with masonry trade who will fill interior frames with mortar.
3. Brace frames solidly in position while being built in. Install temporary spreader of wood at mid-height of frame until adjacent

wall work is completed. Provide vertical support at centre of head for openings of 4'-0" (1200 mm) wide or wider.

4. Remove temporary jamb spreader bars and vertical supports only after frames are securely anchored in place.

2. Door Installation:

1. Install hollow metal doors plumb, true and level and at correct elevation.
 2. Co-ordinate installation of hardware.
 3. Adjust operable parts to ensure proper operation.
 4. Install hollow metal panels and closures with concealed fastenings.
 5. Install acoustical assembled doors and frames as per manufacturer's recommendation.
3. Install fire rated doors and frames in accordance with National Fire Codes, Volume 4, produced by National Fire Protection Association (NFPA 80).
 4. Attach fire rating labels to doors and frames required to be fire rated. Ratings shown on door schedule are minimum. Attach temperature rise rated labels to doors required to be 90 MFR or greater.
 5. Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
 6. Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08700 - Finish Hardware.
 7. Adjust operable parts for correct function.
 8. Install glazed lites, stops and louvres.
 9. Install door grilles provided by Mechanical Contractor.

2. TOUCH-UP

1. Remove rust, clean and touch-up any damaged galvanizing with "Zincrich" or "Galvicon" paint.
2. Remove rust, clean and touch-up any damaged paint with approved primer.

End of Section

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements, is part of this section and shall apply as if repeated here.

2. **QUALIFICATIONS**

1. Manufacturers approved for the work of this Section are:
 1. Kawneer Company, Canada Limited.
 2. Fulton Windows (Commadoor Aluminum doors)
 3. Alumicor
 4. Aerloc
 5. SaffiFirst
2. No other manufacturer or supplier, except those noted above, shall be used unless approved in writing by the Architect seven (7) days prior to tender closing.

3. **SHOP DRAWINGS**

1. Submit shop drawings in reproducible vellum form in accordance with GC 3.11 of CCDC Document 2-2008 and Section 01300 – Submittals.
2. Submit shop drawings for the fabrication and installation of associated components of the work. Indicate anchors, joint system, expansion provisions, hardware, and other components not included in manufacturer's standard data. Include glazing details (where required).
3. Before shop drawings and fabrication are started, take critical measurements at the site to facilitate installation and fitting of work.
4. **Shop drawings that are submitted are to be in the units of the tendered drawings with critical on center mullion dimensions (dimension string from datum level to top of opening noting center of mullions) noted along with all other regular shop drawing dimensions, no exceptions. Both units (metric and imperial) are allowed. Openings are to be identified with the corresponding tags on the tendered drawings. (Coordinate with typical A8 drawing notes)**

4. **SUBMITTALS**

1. Submit samples of sections and finishes for Architect's approval before fabrication.

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2. Furnish templates, diagrams, and other data to fabricators and installers of related work, as needed for coordination installation.
 3. Coordinate with Division 16, Section 08700 Finish Hardware and security subcontractor for any electrical provisions required.

5. DESIGN

1. Design for wind and snow loads as set out by the Ontario Building Code, 2012 as currently amended for the building location. Copies of any and all structural calculations made in connection with the supplementary design and/or detailing of the work of this section shall be promptly furnished to the Architect if requested.
2. Submit with shop drawings certification that window and entrance design and construction will meet the specified requirements. Certification shall be in the form of test reports on similar units performed by an independent testing laboratory, and shall meet approval of Architect before fabrication commences.

6. WARRANTY

1. The Work and materials of this Section shall be under warranty in accordance with GC 12.3 of CCDC Document 2 - 2008 but for a period of five years and ten (10) years for hermetically sealed units from the date of Architect's Certificate of Substantial Completion.

2. PRODUCTS

1. MATERIALS

1. Aluminum: Extruded Members: 6063-T54 alloy and temper.
2. Fasteners, Screws & Bolts: 300 Stainless Steel or 400 series stainless steel cadmium plated and of sufficient size and quantity to perform their intended function.
3. Glazing Tape: Tremco 440 tape with built-in shim and as recommended by window manufacturer.
4. Weathering and Glazing Gaskets: Extruded black closed cell or dense elastomer of durometer appropriate to the functions.
5. Spacer Shims: oil resistant rubber or plastic acceptable to glass manufacturer, channel shaped and approximately 4" long (100 mm).
6. Silicone Sealant: Dow Corning #795 or as per manufacturers recommendations exceeding CAN2-19.13-M82 Class 40 requirements.
7. Isolating Coating: Black alkali resistant bitumastic enamel.
8. Spray-On Insulation: Supply and install by this section as per Section 07215.

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9. Miscellaneous: Supply all covers, copings, special flashings, filler pieces, termination pieces, caps closures and expansion joint covers as required and as indicated on drawings.
 10. Glass for Aluminum Doors: as per 08800 Glass and Glazing Section.
 11. Glass for Exterior Aluminum Entrance Framing: as per 08800 Glass and Glazing Section.
 12. Glass for Interior Aluminum Screens: as per 08800 Glass and Glazing Section.

2. FABRICATION

1. General

1. Construct aluminum assemblies of extruded sections to size and profile shown on drawings.
2. Build units square, true, accurate to size, free from distortions, waves, twists, buckles or other defects detrimental to performance or appearance.
3. Units too large for handling or shipping shall be prefabricated in shop, disassembled and marked for shipping and field assembly.
4. Use concealed fastenings. No exposed screws shall show in the finished work unless approved by the Architect. Such screws shall be countersunk and finish match surfaces in which they occur.
5. Joints shall be accurately cut and fitted to result in a tightly closed joint.

3. DOORS, ENTRANCE SCREENS, INTERIOR SCREENS

1. Frames

1. "Kawneer Trifab 400, Center, Interior Glazed" framing at interior entrance screens with door system.
 2. For both products listed above, coordinate with manufacturer and drawings for side light base heights (dimension to match doors) with associated aluminum sill flashing, metal liner, insulation and aluminum panels where indicated on drawings.
2. Conform to CAN3-A440-M90 performance standards Air Leakage to meet the Fixed rating, and Type A3, Water Leakage Type B5 and Wind Resistance Type C7.

3. Doors

1. Interior doors to be "**Kawneer 190 Narrow Stile**" with single glazing. (Coordinate with door schedules on drawings)
3. Interior screen doors to be coordinated with screen schedules and associated door type schedules.
2. Coordinate with door schedules for heads and stiles sizing and base height. Adjacent screens / curtain wall bases to match door base height typical.
3. Provide mid-rail at all doors that require panic devices, coordinate with door schedules for sizing.
4. The core shall be foamed-in-place urethane foam at density of 5.0 lb./cu.ft. (64 kg.m³). Provide insulated aluminum panel where indicated on drawings.
5. Stiles shall have a wall thickness of .125". (3.2 mm). Glazing mouldings shall be .050" thick (12.7 mm).
6. Use snap-in type square glazing stops with neoprene bulb type glazing. Do not use exposed screws to secure stops. Use lock-in, tamperproof type stops.
7. Equip door leaf with an adjustable mechanism in top rail near the lock stile, to provide for minor clearance adjustments after installation.

4. Door Hardware

1. Equip all aluminum doors with continuous weather stripping with adjustable weather stripping at the base; and aluminum thresholds, 6mm (1/4") maximum vertical height, over 6mm up to 1/2" (12.7mm) height to be sloped / bevel in a 1 in 2, 50%. Closer cover to match door finish colour.
2. Equip all aluminum doors with full height (continuous) heavy-duty stainless steel hinge.
3. All other hardware including concealed closers, exposed closers, locksets, exit device, push/pulls, overhead stops, handicap automatic door openers to be supplied under Section 08700 – Finishing Hardware and installed under Section 06200 – Finish Carpentry.

5. Finish

1. Prepare and fabricate components as required before finishing.

2. Finish to be clear anodized.
3. Metals other than aluminum shall match colour finishes.
6. Closures, Flashings and Miscellaneous Covers
 1. Provide .125" (3 mm) thick aluminum closures and caps where required.

3. EXECUTION

1. INSTALLATION

1. Secure work adequately and accurately to the structure in required position and in manner not restricting thermal movement. Work shall be plumb, square and level, free of twist, warp or other superimposed loads. Provide shims as required.
2. All metal to metal joints shall be sealed to provide a weathertight assembly in accordance with manufacturer's instructions.
3. Use concealed fixings where possible, where not possible use flat head screws in countersunk holes. Exposed bolt or nut heads not permitted. Match exposed fastenings with surfaces on which they occur.
4. Isolate all aluminum coming in contact with unlike materials with heavy shop coating of black alkali resistant bitumastic enamel to prevent electrolytic or chemical reaction.
5. Fill voids between aluminum extrusions and wall surfaces at exterior doors and entrance framing with foam spray applied insulation where required to prevent movement or infiltration of air. Supply and install spray-on insulation as per Section 07215 – Spray-On Insulation.
6. Supply and install all caps and closures where required to create a complete installation and as indicated on the drawings.

2. CAULKING

1. Caulking between aluminum and aluminum; aluminum and glass to conform to this section. Caulking to perimeter drywall masonry and concrete all by this section as per Section 07900 - Sealants.
2. Caulking by this Section shall be installed as per Section 07900.

3. GLAZING

1. Glaze windows in accordance with CAN3-A440-M90.
2. Set glazing tape against permanent stops, allow 1/8" for cap bead, set

horizontal strips first using full width pieces of tape, then set vertical pieces. Butt tape at corners, do not lap tape or run continuous at corners.

3. Set glass on setting blocks, number as recommended by glass manufacturer. Set glass with draw lines horizontal.
4. Apply heel bead on interior, using sealant. Place spacer shims, set glazing tape against glass and install stops.
5. Apply cap bead to fill void on exterior. Tool sealant with a slight bevel, sloped away from the glass to create a water shed.
6. Mark each light with a large white cross to indicate the presence of glass.
7. Replace under this section defective, damaged or broken glass due to faulty setting, handling or storage.
8. Neoprene bulb type glazing in accordance with manufacturer's instructions.

4. ADJUST AND CLEAN

1. Adjust all hinges, closers and weather stripping for optimum condition. Lubricate operating equipment.
2. Clean surfaces promptly after installation, exercising care to avoid damage of the protective coating (if any).
3. Advise the contractor of protective treatment and other precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration (other than normal weathering) at the time of acceptance.
4. Aluminum shall be isolated from concrete, mortar, plaster and dissimilar metal with bituminous paint. Windows shall be protected from other building materials during and after insulation until acceptance by the General Contractor. Thereafter, it shall be the responsibility of the General Contractor to maintain protection and provide final cleaning.

END OF SECTION

1. GENERAL

1. GENERAL REQUIREMENTS

1. Division One, General Requirements is a part of this Section, and shall apply as if repeated here.

2. INSPECTION

1. Hardware supplier shall check all hardware when it has been installed and shall notify the Architect of any cases where it has not been properly installed, is defective, or is not as specified. Replace defective hardware. Hardware supplier or closer manufacturer on his behalf shall check all door closers after they have been installed to make sure that all adjustments such as back checking degree have been properly made. Notify the Architect of any closers which have not been properly adjusted.

3. SCHEDULING AND PACKAGING

1. Supply finishing hardware to those who are to install it complete with templates and other complete installation instructions, in sufficient time to avoid delaying the progress of the work.
2. Package hardware separately for each door or unit and state clearly on each package the number and description of the door or unit for which the hardware therein is intended.
3. Supply all required expansion shields, anchors, and other related accessories for satisfactory attaching or installing all finishing hardware.
4. Supply a key box to hold a minimum of 2 keys for each door.

4. HARDWARE LISTS

1. Prepare and submit for approval, 5 copies of a hardware list indicating the type, manufacturer, number, location and finish of each item of finishing hardware supplied under this Section. All new hardware shall match existing building hardware in operation, type and finish. Review and coordinate hardware on site prior to preparation of hardware list.

5. Installation Items

1. Coordinate list of hardware with drawings including:
 - sets of weather stripping
 - door sweeps surface applied
 - door pulls to mounting
 - wall/floor stops
 - surface door closers
 - cylindrical locksets/latchsets
 - mortise deadlocks
 - hinges full mortise

END OF SECTION

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements, is a part of this section and shall apply as if repeated here.

2. **WARRANTY**

1. The work under this Section shall be warrantied in accordance with the terms of the contract but for a period of 10 years on insulated units and 5 years on all other work from the date of Architect's Certificate of Substantial Completion.

3. **PROTECTION**

1. Mark each light with a large white cross to indicate presence of glass. Use flour and water paste for markings.
2. Replace under the work of this section, defective, damaged or broken glass due to faulty setting, handling or storage.

5. **SUBMITTALS**

1. Submit shop drawings in accordance with 01300.

2. **PRODUCTS**

1. **MATERIALS**

1. **Tempered Glass:** 1/4" (6 mm) clear glass tempered conforming to CAN/CGSB - 12.1 M90 equal to Ford Glass.
2. **Glazing Tape:** Tremco 440 tape and as indicated in other glass sections.
6. **Sealant:** CWS by Dow Corning.
7. **Heal Bead Sealant:** One part polysulphide or acrylic sealant conforming to CGSB 19-GP-5 and as indicated in other glass sections.
8. **Spacer Shims:** neoprene, Shore "A" durometer hardness 80, 3" (75 mm) long x 0.08" (2.4 mm) thick and 3/8" (9 mm) high.
9. **Setting Blocks:** neoprene, Shore "A" durometer hardness, 4" (100 mm) long x 1/4" (6 mm) high x width to suit glass thickness.
10. **Primer:** Sealers and cleaners to glass manufacturer's standard

NOTE: colour selection of glass shall match existing glazing on site and

shall be confirmed by supplier prior to manufacturing.

3. EXECUTION

1. WORKMANSHIP

6. Installation of glass shall be by workmen skilled in this trade and done in strict accordance with material manufacturer's directions to produce a first-class installation.
7. Accurately cut glass to fit opening and provide for glass expansion.
8. Carefully remove glazing stops and replace after glazing. Exercise care to prevent damage to stops.
9. Collect all glass cuttings in boxes and remove when cleaning up debris.
10. Cut glass and mirrors from dimensions taken in field.
11. Remove protective coatings and clean contact surfaces with solvents and wipe dry.
12. Apply primer-sealer to contact surfaces.

2. ALUMINUM WINDOWS

6. Installed under Section 08400.

3.. FINISHING

1. Immediately remove sealant and compound droppings from finished surfaces. Remove labels after work is completed and inspected by Architect.

END OF SECTION

1. GENERAL

1. GENERAL REQUIREMENTS

1. Division One - General Requirements, is part of this section and shall apply as if repeated here.

2. RELATED WORK

1. Gypsum Board - Section 09250

3. QUALIFICATIONS

1. Conform to CSA A82.30-M1980 including appendices.

4. SHOP DRAWINGS

1. Submit shop drawings as denoted within 01300.
2. Shop drawings are to be designed for fabrication to meet all codes and be stamped by a Professional Engineer registered in the Province of Ontario.
3. Clearly indicate construction details, sizes, thickness or gauge of steel studs, connections, joints, method of anchorage, number of anchors, supports, reinforcement and accessories. Confirm all dimensions on site.
4. Indicate control joint and expansion joint locations and framing details.

1. PRODUCTS

1. MATERIALS

1. Non-load-bearing channel stud framing less than 4800 mm long: to ASTM C645-83 size as noted on drawings, roll formed from 25 gauge (0.53 mm) thickness electro galvanized steel sheet; for screw attachment of gypsum board. Knock-out service holes at 1'-6" (460 mm) centres.
2. Extra strength channel stud framing (4800mm long and greater): to CAN 3-S146-M84 for design and ASTM A446 for steel, 3 5/8" (92 mm) or 6" (152 mm) stud size, roll formed from 20 ga. (0.91 mm) thickness hot dipped galvanized steel sheet; for screw attachment of gypsum board. Knock-out service hole a 1'-6" (460mm) centres. Use this type at all exterior framing locations. Note interior extra strength stud partitions with drywall on both sides can be electro galvanized finish.
3. Floor and ceiling tracks: to ASTM C645-83; in widths to suit stud sizes, 1 1/4"

(32 mm) flange height.

4. Metal channel stiffener: size to suit studs, 2 mm thick cold rolled steel, coated with rust inhibitive coating.
5. Bridging channels and diagonal tension straps (load bearing stud systems): material and gauge to match studs, let into or surface fastened to studs for diagonal/lateral bracing and reinforcement.
6. Screws: CGC Branch Screws (or approved equal) of type recommended in the selector guide on Page 5 of Canadian Gypsum Brochure 09250 - 1E.
7. Furring Channels: 7/8" (22 mm) x 2 3/8" (60 mm), 25 MSG cold rolled galvanized after fabrication, types manufactured by Donn Products, Universal Sections or Canadian Gypsum Co. to meet CSA A82.30-M1980.
8. Carrying Channels: 1 1/2" (38 mm) x 6 lbs./10 ft. (892 g/m) cold rolled steel after fabrication to meet CSA A82.30-M1980.
9. Hangers: 1/4" (6.3 mm) dia. galvanized pencil rods at 4'-0" (1220 mm) o.c. maximum on main tees to meet CSA A82.30-M1980.
10. Tie Wire: No. 16 (1.5 mm) Imperial Wire gauge galvanized soft annealed to meet CSA A82.30 - M1980.
11. Anchors: to meet CSA A82.30-M1980 standard.
12. Heavy Duty Studs: 4" (100 mm) and 6" (150 mm) 16 gauge (1.5 mm) as supplied by Bailey Metal Products Ltd., Toronto, Ontario.
13. Acoustical Sealant: Acoustical sealant to CGSB 19-GP-21M by Tremco or approved equal.
14. Insulating Strip: Rubberized, moisture resistant 1/8" (3mm) thick foamstrip, 1/2" (12mm) wide with self-sticking adhesive on one face, lengths as required.

2. EXECUTION

1. GENERAL

1. Installation shall be by mechanics skilled in this trade and done in accordance with best standard practice and material manufacturer's printed directions.
2. Do not cover piping, conduit, duct and the like until inspected and approved by the Architect.

3. Furring indicated shall not be regarded as exact or complete.
4. Method of framing and furring left to Contractor's option but shall result in a rigid, secure, plumb framing and forming, erected to maintain overall sizes as indicated and of adequate strength to support without distortion of the facing indicated. Wall furring and suspended and furred ceilings must be installed to meet CSA A82.31-M1980 except where specified otherwise.
5. Do not make fastenings to ducts, pipes, conduit, door frames, backers or inserts of other trades not specifically intended for fastening metal furring.
6. The completed installation of framing and furring must allow finished wall system to be installed free of waves, depressions, other defects that would mar the finished appearance.
7. Provide only additional framing as follows where required where existing framing is inadequate or in the wrong direction. Coordinate with existing drawing and existing site conditions.

2. WALL FRAMING / FURRING.

1. Install partition tracks at top and bottom of studs, align accurately, and make allowance for deflection under beams and structural slabs to avoid transmission of structural loads to studs. Use 2" (50 mm) leg ceiling track.
2. Secure tracks to concrete and steel with power actuated fasteners at a min. 24" (600 mm) o.c.
3. Install dampproof course (vapour barrier) under stud shoe tracks of partitions on slabs-on-grade.
4. Place studs vertically at 16" (400 mm) centres and not more than 2" (50 mm) from abutting walls, openings and each side of corners. Secure studs to tracks at floor and ceiling using screws or crimp method. Place interior heavy duty studs vertically at 12" (300 mm) centres where indicated on drawings.
5. When necessary, splice studs with 8" (200 mm) nested lap and one positive attachment per stud flange. Place studs in direct contact with door frame jambs, abutting partitions, partition corners and existing construction elements. Where studs are installed directly against uninsulated surfaces install insulating strips between studs and wall surfaces.

6. Anchor studs for shelf-walls and those adjacent to door and window frames, partition intersections and corners to ceiling and floor runner flanges with an approved crimping tool. Securely anchor studs to jamb and head anchor clips of door or borrowed-light frames, place horizontally a cut-to-length section of runner, with a web-flange bent at each end, and secure with one positive attachment per flange. Position a cut-to-length stud (extending to ceiling runner) at vertical panel joints over door frame header.
7. Install heavy gauge single jamb studs at all openings.
8. Erect metal studding to tolerance of 1:1200.
9. Stiffen partitions exceeding 8' (2400 mm) in height and/or 10' (3000 mm) in length with 3/4" (19 mm) channel bracing extending horizontally across the length of the partition. Provide one horizontal stiffener for partitions under 12' (3600 mm) high; at least two horizontal stiffeners for partitions 12 or more feet high (3600 or more mm), at maximum 6' (1800 mm) centres. Install metal strapping securing stud to masonry or concrete walls at every other stud where horizontal stiffeners occur. Provide other partition reinforcing necessary to support wall hung components, cupboards, closets and the like. Use 2 studs at jambs of openings and corners.
10. Where horizontal runs of service lines are to be installed within the partition, erect studs with web openings aligned.
11. Provide reinforcing and necessary stiffeners to support hollow metal screens. Reinforcing to be capable of supporting screens rigidly and solid without deflection.
12. Work includes the installation of hollow metal frames.
13. All fire rated partitions must be installed from floor to underside of floor slab at ceiling above.
14. Provide horizontal 25 ga. metal anchor strips with wood blocking behind it for blocking behind wood base millwork tackboard and chalkboard, etc. All wood blocking for trim, base, millwork, miscellaneous specialties, to be installed by Section 06100 after erection of metal studs and ceiling suspension system.

3. CEILINGS

1. Supply and install suspension and furring system for ceiling bulkhead, light cove panels. Coordinate with existing site conditions.
2. Do not regard suspension system indicated on drawings as exact or

complete. The specification for metal framing contained in Canadian Gypsum Co. Ltd. Brochure 09260 - 1E and CSA-A82.31-M80 shall govern installation conditions not covered by this specification. The more stringent being the acceptable.

3. Install hangers for suspended ceiling to support the grillage independent of the walls, columns, pipes, ducts and the like. Erect plumb and securely anchor to the structure. submit details of the proposed method to the consultant for approval. If so requested by the Architect, test hangers to provide that anchorage is adequate to support the proposed loading.
4. Space hangers at maximum 3'-0" (910 mm) centres in the direction of the carrying channels and at 4'-0" (1200 mm) centres at right angles to the carrying channels, within 6" (150 mm) of ends and where normally required in good standard practice.
5. Space furring channels at maximum 16" (400 mm) o.c.
6. Frame exterior soffits and walls using hot dipped galvanized framing materials and rustproof fasteners.

END OF SECTION

1. GENERAL

1. GENERAL REQUIREMENTS

1. Division One, General Requirements, is a part of this section and shall apply as if repeated here.

2. DESCRIPTION

1. Work of this Section includes:
 1. Gypsum wallboard repairs.
 2. Interior wall sheathing.

3. QUALIFICATIONS

1. Contractor for this work to have a minimum of five years' experience in installation of wallboard.
2. Install work to CSA A82.31-M1980, C.G.C., Drywall Construction Handbook and the Manual of Gypsum Wallboard Construction by Gypsum Drywall Contractor's International except where specified otherwise.

4. DELIVERY, STORAGE

1. Store materials in a dry weather proof enclosure. Store wallboard flat, in piles without overhanging boards.
2. Do not install damaged or deteriorated material but remove from site.
3. Materials as delivered shall bear the manufacturer's name branch name of material and where applicable, CAN/CSA classification.

5. JOB CONDITIONS

1. Air and surface temperature: Minimum 54 F (12 C) and maximum 77 F (25 C) for 24 hours before, during and until entire installation is complete.
2. Ensure proper ventilation, during and following joint treatment, to eliminate excessive moisture.
3. Examine surfaces in which wallboard is to be attached and check environmental conditions and do not commence work until surfaces and conditions are satisfactory.
4. Commencement of work will denote acceptance of conditions.

6. PROTECTION

1. Protect work of other sections against damage resulting from work of this section. Repair and make good to approval, damage to other sections caused by this work.

7. SUBMITTALS

1. Submit shop drawings showing control joints for Architect's approval.
2. Submit sample of each type of casing bead, corner bead, control joints, reveal moulding, etc.

8. ADDITIONAL DRYWALL AND FURRING

1. Include in base bid quote by this Section 09250 and 09110 for an additional 15 sq. metres of gypsum wallboard complete with metal furring and finished taping. Locations as per required by Architect.

2. PRODUCTS

1. MATERIALS

1. Gypsum Wallboard:

- .1 Manufacturer: Specification is generally based on Canadian Gypsum Co. Ltd. material but equivalent materials by other manufacturers are acceptable.
- .2 Backing Board and Gypsum Coreboard: CSA A82.27-M1977.
- .3 Gypsum Wallboard: CSA A82.27-M1977. Use Type 'X' (special fire retardant) board such as CGC Firecode 'C' when fire rating is required, 16 mm, (5/8") thick. Use board with round or tapered edges.
- .4 Exterior Sheathing: 5/8" (16mm) thick Dens-Glass Gold Fiberglass - Faced Sheathing by Georgia Pacific Corporation.
- .5 Tile Backer Board: at showers (walls and ceilings), washrooms (walls and ceilings), drinking fountains (walls), wet or moist areas receiving a tile finish: 16mm (5/8") thick, Dens-Shield tile backer board by Georgia-Pacific Corporation. Use board with round or tapered edges.

(If existing wall systems do not have this wall substrate, it is to be installed, including removal of existing finish substrate and installation of specified substrate above – if existing wainscoting exists, contact architect for further clarification)
(Tile Backer Board is not required on masonry wall substrates unless otherwise noted on drawings)

2. Accessories:

1. Casing beads, corner beads, fill type: 24 ga. (0.5 mm) base thickness commercial grade sheet steel with G90 zinc finish to ASTM A525-80A; perforated flanges; one piece length per location.

NOTE: Use Beadex U Trim (thickness as required) where "J" mould is indicated on drawings as manufactured by Beadex Manufacturing Company Inc.

2. Screws: C.G.S. Brand Screws Type S. 1" (25 mm) and 1 ½" (38 mm) as required to C.S.A. A82.31-M1980. For exterior Sheathing and tile backer board use 1 ¼" Bugle head fine thread rust resistant drillpoint drywall screw (type S-12).
3. Joint Treatment Material: CGC MC "All-Purpose" and CGC MC "Joint Topping" compounds - to ASTM 0474 and 0475. Use materials recommended by board manufacturer for the proposed use. Material shall be pre-mixed, ready to use, in sealed cans.
4. Reinforcing Tape: Perf-a-Tape by CGC or equal.
5. Adhesive: CGC "Durabond" 90 pre-mixed, ready to use in sealed cans.
6. Acoustic Materials:
 1. Acoustical Caulking: Acoustical sealant by Tremco or approved equal to CGSB 19-GP-21M.
7. Control Joint: equal to C.G.C. control joint No. 093.
8. Stud adhesive: to C.G.S.B. 71 GP-25M.

3. EXECUTION

1. EXAMINATION

1. Examine surfaces and other conditions on which work of this Section depends and do not proceed until conditions are suitable.
2. Commencement of work will denote acceptance of conditions.
2. GYPSUM BOARD INSTALLATION
 1. General:
 1. Do not install gypsum board until work of other Trades which will be covered by the board has been installed and approved.
 2. Use board of maximum practical length to reduce number of end joints. Install control joints in long runs of board.
 3. Fit ends and edges closely, but do not force together.
 4. Attach board to framing using screws, not nails.
 2. Installation on Stud Framing:
 1. Install board vertically or horizontally whichever results in fewer end joints, use longest possible lengths. Cut and fit boards around openings, beams, joists, ducts, light fixtures and similar items. Install board up to underside of slab or metal deck above to provide sound insulated walls and fire separations.
 2. Minimize gypsum board joints over openings. Use one piece application to span over opening width where board lengths allow. There is to be no board joint directly over / above edge condition of opening.
 3. Position edges over supports for vertical or horizontal application.
 4. For single layer vertical application space screws 12" (300 mm) o.c. for field of panel and 6" (150 mm) o.c. staggered, along vertical abutting edges. For horizontal application space screws 12" (300 mm) o.c. in field and 8" (200 mm) and along abutting end joints. For double layer application, stagger joints in second layer of boards, a minimum of one-stud spacing in both directions and fasten with screws as before.
 3. Install board continuously above ceiling at exterior walls to support spray foam insulation air/vapour barrier system where it occurs.

3. FINISHING

1. Mix joint compound (powder) in accordance with manufacturer's printed instructions.
2. Prefill "V" grooves of rounded edges with Durabond 90 compound. Finish flush with tapered surface ready for reinforcing tape application. Allow pre-fill material to dry thoroughly before application of embedding compound and tape.
3. Apply "All-Purpose" compound in thin uniform layer; embed reinforcing tape accurately centred on joint, securely pressed in, leaving sufficient compound under tape to provide proper bond. Immediately apply skim coat over tape application. Allow to dry thoroughly before application of filler coat.
4. Apply filler coat of "Topping" compound such that taper depression is flush with board surfaces. Allow to dry thoroughly before application of finish coat.
5. Apply finish coat of "Topping" compound extending slightly beyond the filler coat and feathered out onto the board surface.
6. Sand between coats and following the finish coat, where necessary, and leave surface smooth and ready for painting.
7. Finish screw depressions with filler material and finish coat as specified in 4. and 5. above.
8. Joint and depression finish shall in no case protrude beyond the plane of the board surface.
9. Finish corner beads and metal trim flush with board surface using filler and finishing coats feathered out approximately 2" (50 mm) and 4" (100 mm) respectively onto the board surface to ensure that metal visible only at arris.
10. Fill and tape joints and internal corners and fill screw depressions in board face and smooth out along corner beads and metal trim with joint compound.
11. Provide specified metal trim and control joints at exposed edges, at junctions of drywall with dissimilar material, at control joints and at junction with columns. Fasten with screws at 12" (300 mm) o.c. along entire length.
12. Cut out a 'V' at all butt joints and install Durabond 90 then complete with filler and topping coats.

13. Avoid sanding adjacent paper surface of boards.

4. CLEANING

1. Clean thoroughly and remove all excess materials from other surfaces.
2. Remove all excess materials as job proceeds and at completion.

5. ACCESSORIES

1. Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 6" (160 mm) o.c. for full length.
2. Install "J" molds around perimeter of suspended ceilings.
3. Install "J" molds where gypsum board butts against surfaces having no trim concealing junction and where indicated.

6. CONTROL JOINTS

1. Construct control joints using C.G.C. control joint No. 093 set in gypsum board facing and supported independently on both sides of joint.
2. Provide shrinkage control joints in accordance to the best standard practice to meet the approval of the Architect and as noted on drawings.
3. Locate control joints at approximately 25 feet (7600 mm) in ceilings and walls and where shown on drawings.
4. Locate control joints at changes in substrate construction.
5. Install control joints straight and true.
6. Install additional control joints as directed on site by the Architect and as the subtrade recommends to eliminate future drywall problems.

7. THERMAL BREAK

1. Provide a continuous moisture resistant insulating material at edges of wallboard in contact with aluminum windows and exterior door frames to provide a thermal break.

8. CERTIFICATION

1. Provide at completion of work a written certification that all drywall work where applicable conforms to the required ULC fire rated assemblies.

9. ACOUSTICAL MATERIALS

1. Provide caulking around all ducts, pipes, conduits and other items passing through partitions
2. Electrical Outlets: cut holes neatly to reduce leaks. Caulk it tight around outlets before plate is installed. Do same for wall mounted fixture outlets before fixtures installed.

10. INSTALLATION OF EXTERIOR SHEATHING

1. Examine subframing; verify that surface of framing and furring members to receive sheathing does not vary more than 1/4" from the plane of faces of adjacent members.
2. Install sheathing in accordance with manufacturer's instructions and applicable instructions in GA-253.
3. Install Dens-Glass Gold with gold side out.
4. Use maximum lengths possible to minimize number and joints. Locate edge joints parallel to and located on framing. Stagger intermediate end joints of adjacent lengths of sheathing.
5. Attach sheathing to metal framing with screws spaced 8" (200mm) o.c. at perimeter and 8" (200mm) o.c. in field.
6. Drive fasteners to bear tight against and flush with surface of sheathing. Do not countersink.
7. Locate fasteners minimum 3/8" from edges and ends of sheathing panels.

END OF SECTION

PART 1 - GENERAL

1. GENERAL REQUIREMENTS:
 1. Division One is part of this Section and shall apply as if repeated here.
2. REFERENCE STANDARDS:
 1. Do tile work to Installation Manual 2000 "Quarry Tile and Ceramic Tile", produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.
 2. Contractor shall have been and still be a current member of the TTMAC.
3. MAINTENANCE DATA:
 1. Provide maintenance data for tile work.
4. MAINTENANCE MATERIALS:
 1. Provide minimum 2% of each type and colour of ceramic and porcelain tile required for project maintenance use. Store where directed.
 2. Maintenance material to be of same production run as installed material.
5. ENVIRONMENTAL REQUIREMENTS:
 1. Air temperature and structural base temperature at porcelain tile and ceramic installation area must be above 54°F (12°C) for 48 hours before, during and 48 hours after installation.
6. SAMPLES:
 1. Submit 4" x 1'-0" (100 mm x 300 mm) samples of each type, colour, texture, size and pattern of tile to be used for the approval of the Architect before installation.
7. SHOP DRAWINGS:
 1. **Ceramic Tile: submit shop drawings showing expansion joint, control joint locations and pattern layouts for Architect's approval.**
8. ASSEMBLY:
 1. All installation assemblies will compose of materials from the same manufacturer and be completely compatible. The completed assembly will pass the service requirements "Extra Heavy Duty" (Passing ASTM C627 - Cycles 1 through 14) as described in the TTMAC Specification Guide and TCA Handbook (Page 10).

PART 2 - PRODUCTS

1. Tiles:

1. Tile: Conforming to CGSB 75-GP-1A.

2. Colours: Indicated for ceramic, porcelain and glass tiles are for tendering purposes. Final colour selection to be confirmed by Architect prior to installation. Three colours to be selected from full range with one colour as the field from price group 2 and two colours as accent from price group 4.

3. NOTE: Provide round edge, round edge both sides, cove base, nosing's and tiles to do all work as per drawings and as required.

4. Ceramic Tiles: (coordinate with room finish schedules)

.1 CT1 - Wall Tile: 100mm x 300mm (4"X12") ST1 Ragno Touch by Stone Tile, Colour to be White Matte, stack bond pattern installed vertically. Alternate by Daltile or Olympia.

.2 CT2 - Wall Tile: 100mm x 300mm (4" x 12") Cesi by Stone Tile. Colour to be Polverre, stack bond pattern installed vertically. Alternate by Daltile or Olympia.

.3 CT3 - Wall Tile: 100mm x 300mm (4" x 12") Cesi by Stone Tile. Colour to be Mela, stack bond pattern installed vertically. Alternate by Daltile or Olympia.

.1 Mortar Beds:

1. For Walls: 1 part Portland Cement: 1/5 to 1/2 parts hydrated lime; 4 parts sand; gauged with Custom - Flex latex by Custom Building Products as per manufacturer's directions. All Custom Building Products are distributed by Brolain Distributors Ltd. 519-740-9311. Approved equal manufacturer is TEC. NOTE: Adhesive application will not be accepted.

2. For Floors: 1 part Portland Cement: 4 parts sand; gauged with Custom - Flex latex by Custom Building Products as per manufacturer's directions. Approved equal manufacturer is TEC. NOTE: Adhesive application will not be accepted.

.3 Thin Set Mortar: Master Blend Thin-Set Mortar gauged with Custom - Flex latex by Custom Building Products as per manufacturer's directions. Approved equal manufacturer is TEC

.4 Ceramic Tile Grout and Joint Filler: Custom 100% Solids epoxy by Custom Building Products grout system. Approved equal manufacturer is TEC. Colour to be 931 Standard White.

8. Caulking:

.1 Flexible caulking conforming to CGSB 19-GP.22M: Dow Corning 786 and CGE 1702 Sanitary Sealant. Colours as selected by Architect.

.2 Metal Transition Strips: 14 gauge zinc divider strip. Add the following transition strips types by Schluter for the following locations (height of transition strips to suit tile thickness):

.3 Renovation:
Between PT and Linoleum, VCT, Sheet Vinyl, Rubber Floor: Reno V, model Reno-AEV T/B by Schluter Systems.

1. Control Joints:

9. Ceramic Tile: Schluter Dilex BWS (height to suit tile thickness). Colour as selected by Architect.

2. Ceramic Tile Trim:

.1 For ceramic wall tile: Schluter, Jolly, ATGB, colour to be satin anodized aluminum.

PART 3 - EXECUTION:

1. EXAMINATION:

1. Examine substrates before commencing work to ensure they are satisfactory. Defective work resulting from installation on unsatisfactory surfaces will be considered the responsibility of those performing the work of this section.

2. WORKMANSHIP:

1. Regard recommendations, installation methods specified and illustrated in Terrazzo, Tile and Marble Association Manual No. 2000, and applicable manufacturer's instructions as minimum acceptable standard accept as

varied by this Specification.

2. Fit tile units around corners, fitments, fixtures, drains and other built-in objects to maintain uniform joint appearance. Make cut edges smooth, even and free from chipping. Edges resulting from splitting not acceptable.
 3. Maximum surface tolerance 1:800.
 4. Make joints between tiles uniform. Tile joints shall be approximately 1/8" (3 mm) wide, for ceramic tiles and 1/4" (6 mm) wide for porcelain tile, plumb, straight, true, even and with adjacent units flush. Align patterns.
 5. Drill holes for fixing accessories of other trades.
 6. Finish surfaces flat and level (ensure leveler is used to accomplish this) or sloped and graded to drain where floor drains occur.
 7. Sound tiles after setting and replace hollow sounding units to obtain full bond.
 8. Make internal angles square, external angles bull nosed.
 9. Install transition strips at junction of tile flooring and dissimilar material. Where transition occurs in a doorway, transition strip to be below door.
 10. Clean installed tile surfaces progressively as work proceeds. Do not allow mortar to stain absorbent tile. Do not use acids for cleaning. Seal in accordance with manufacturer's approved products and in accordance with TTMAC certified products only.
 11. Layout borders, defined lines, accent patterns and bands wherever they occur prior to setting tile. Keep inner edges of borders against fields or wall panels straight.
 12. Install base trim, control joints, and beveled reducing strips as per manufacturer's instructions.
3. EXPANSION AND CONTROL JOINTS:
1. Control joints to be located directly on block control joints and concrete floor control joints and expansion joints.
 2. Control joints are also to be placed where tile abuts other hard materials.
 3. Install control joints in tile floors at 10'-0" (3050 mm) max. o.c. and at 20'-0" (6100 mm) max o.c. at wall locations. Align joints at concrete floor and

masonry control joint locations as well.

4. Allow for control joints at the perimeter junction to all walls, around all columns.
5. Submit shop drawings to indicate layout of control joints. Porcelain tile control joints shall occur directly above a concrete floor control joint therefore minimizing the cutting of porcelain tile.
6. The approved control joint shop drawing layout shall be marked onto the concrete floor slabs by the porcelain tile contractor and the actual cutting of the control joints in the concrete floor slab shall be done by the concrete floor finisher.
7. At expansion joint locations install back to back metal transition strips at each side of joint then caulk between.

4. CERAMIC TILE:

1. Install ceramic tile by adhesive method in accordance with installation manual Detail No. 303W-2000, for walls.
2. Install levelling coat of 1 part portland cement: 1/5 to 1/2 parts hydrated lime: 4 parts sand: gauged with Custom Flex latex as per Custom building Products instructions at block wall locations.
3. Use a skim coat of adhesive to true up minor imperfections in the substrate surface.
4. Tamp tile into place for truing surface and for good contact with adhesive.
5. Grout joints after 24 hour adhesive set. Remove excess material and clean surface.
6. Clean all surfaces with cleaner solution specified as per manufacturer's instructions.

5. PROTECTION FROM CONSTRUCTION DIRT:

1. Seal cementitious grout joints and unglazed tile with "Aqua Mix Penetrating Sealer" by Aqua Mix Inc. or as recommended by manufacturer.
2. Cover all tile floors with heavy duty non-staining cotton reinforced paper or 6 mil vapour barrier taped into place.
3. Prior to final acceptance of tile work, remove paper and clean with

"Aqua-Mix Miracle Cleaner" by Aqua Mix Inc. or as recommended by manufacturer.

6. PROTECTION FROM TRAFFIC:

1. Prohibit all foot and wheel traffic from using newly tiled floors for at least three days, preferably seven days after grouting is completed.
2. Place large, flat boards in walkways and wheel ways for seven days, where use of newly tiled floor is unavoidable.
3. Leave finished installation clean and free of cracked, chipped, brock, unbonded or otherwise defective tile work. Replace damaged or defective work.
4. Provide cardboard walkway using recycled boxes to protect finished work during construction.

END OF SECTION

Part 1 - GENERAL

1. GENERAL REQUIREMENTS

1. Division One is a part of this Section and shall apply as if repeated here.

2. DESCRIPTION OF SYSTEMS

1. Lay-in Tile System: Exposed suspended tee-bar system accommodating 2'-0" x 4'-0" (610 mm x 1220 mm), and other sizings of acoustical panels in areas as indicated drawings and reflected ceiling plans as acoustical tile ceiling.
2. All tile and suspension systems shall comply to U.L.C. Design as indicated on drawings.

3. SAMPLES

1. Submit for approval, two samples of each type of tile to be used in the project.

4. WORK INCLUDED

1. This contractor shall supply and install all acoustic tile and required accessories as indicated on the working drawings, room finish schedule, including the following:
 - .1 All non-combustible ceiling board.
 - .2 All exposed "T" grid suspension systems.

5. MAINTENANCE MATERIALS

1. Deliver acoustical units in packages for maintenance use amounting to 3% of gross ceiling area for each lay-in panel type. Store where directed. Clearly identify packages.
2. Maintenance materials shall be of same production run as installed materials.

6. ENVIRONMENTAL CONDITIONS

1. Commence installation only after building has been enclosed and dust generating activities have been completed.
2. Permit wet work to dry completely before commencement of installation.
3. Ensure that a uniform minimum temperature of 15 deg. C. and humidity of 20-40% before, during, and after installation is maintained.

7. LETTER OF CERTIFICATION

1. The Contractor, together with manufacturer, shall submit a written confirmation, signed by manufacturer's registered professional engineer, stating that the suspended ceiling system will provide adequate support for electrical fixtures, as required by current bulletin of the ESA of Ontario Hydro. NOTE: all electrical fixtures to have independent supports in fire rated ceilings.

8. WARRANTY

1. Provide 10 year warranty on ceiling tiles for humidity and sag resistance.

Part 2 - PRODUCTS

1. Lay-in Tile System:

1. Hangers: Min. No. 12 (2.5 mm) SWG galvanized mild steel hanger wire - 24" (600 mm) o.c. or galvanized steel wire of size capable of safety supporting anticipated ceiling system and loading.
2. Tees: Donn Suspension Systems by C.G.C. (Typical Lay In)
3. Tees: Armstrong Superfine 9/16" suspension Systems for square tegular tile system (Tech Zone)
 - .1 Main Tees: .021" (.53 mm) thick cold rolled steel, double web, with rectangular bulb section at least 1 1/2" (38 mm) high. Fabricate with punched cross tee holes at not greater than 16" (400 mm) o.c. and hanger wire holes at 2" (50 mm) o.c. Exposed flange shall be 15/16" (23.8 mm) wide and not less than .009" (.23 mm) thick cold rolled steel.
 - .2 Cross Tees: Double web design with rectangular bulb; web extending to form a positive inter lock with main tees in same exposed flange width.
 - .3 See lay-in panel types for width of Tees to be used with each tile type.
4. Provide AXIOM 6" Transition, as manufactured by Armstrong Ceilings, as part of separate price option adjacent to skylight ceiling features as shown in alternate details on plan. Refer to drawings for locations. Contractor to coordinate all components of this product as recommended by manufacturer.
5. Accessories:
 - .1 Miscellaneous approved clips, splicers, screws, nails and other standard types to suit applicable conditions. Provide special accessories as required. Accessories shall be galvanized after

- forming.
- .2 Standard edge moulding as manufactured by system manufacturer to suit applicable details. Moulding shall be formed of zinc coated steel.
 - .3 Provide Armstrong Impact Clip System Item No. 414 system at areas where clipped down ceilings are indicated on drawings and at all vestibule entrances. Provide accessible type clips where access is required.
6. Finish:
- .1 Tees, edge mouldings, and exposed accessories shall be finished with baked, non-yellowing, low sheen colour to match colour of lay-in panels.
7. Lay-in Panels:
- .1 Install tile types where acoustic tile is indicated on room finish schedule. Mineral tile types are as listed below:
 1. Typical
AT1: "Cortega" #823 - 24" x 48" x 5/8" (610mm x 1220mm x 16mm) with square lay-in edge detail as manufactured by Armstrong or equal by C.G.C. or Celotex
 2. Health - Washrooms
AT2: "Ultima Health Zone High NRC" - 24" x 48" x 1" (610mm x 1220mm x 25mm), with square lay-in edge detail as manufactured by Armstrong.
8. Tie Wire: 1.2 mm galvanized annealed steel wire.
9. Inserts and attachments to Structure for Hanger Connections: to suit conditions and loadings, galvanized after fabrication.

Part 3 - EXECUTION

1. WORKMANSHIP
 1. Installation shall be by skilled mechanics and in strict accordance with system manufacturer's printed directions to produce a first class, flush finished surface in true plane and free from drooping, warped, uneven joints, damaged tile or panels. Butt joints tightly.
 2. Consult with mechanical and electrical trades to co-ordinate and arrange work to accommodate recessed fixtures, diffusers, grilles, and other similar items, where indicated on mechanical and electrical

drawings. Recessed items shall replace, or be centred in acoustical units.

3. Frame around recessed fixtures, diffusers, grilles and openings and where normally required in good standard practice.
4. Provide all furring required and construct drywall bulkhead, incorporated as part of best standard practice to Architect's approval.
5. Provide and install protection panels and/or five sided box enclosures at recessed lighting fixtures, speaker boxes, diffusers, duct openings, firestop flaps, etc. as specified in the applicable ULC assembly specification. Approval of enclosures and protection will be by Architect and/or Municipal Authorities.

2. ERECTION

1. Lay-in Tile System

- .1 Install ceiling suspension system to ASTM C636-76 and manufacturer's instructions, except where specified otherwise.
- .2 Supply hangers and inserts to support the grid in time to be installed in structural system if required.
- .3 Hangers for acoustic systems shall be spaced to comply to U.L.C. Design, approximately 4 ft. (1200 mm) centres both ways and where normally required in good standard practice.
- .4 Secure hangers firmly.
- .5 Erect carrying channels for suspended systems of required elevation and level to tolerance of 1/8" (3.2 mm) over 12 ft. (3650 mm). Frame around recessed fixtures, diffusers, grilles and openings and where normally required in good standard practice. Furr around ducts, beams, bulkheads or the like, as shown or required by U.L.C. Standard.
- .6 Ensure that the suspension system supports the completed assembly, including all superimposed loads, such as lighting fixtures, diffusers and grilles, with a maximum deflection of 1/360 of the span. Provide supplemental hangers within 6" (150 mm) of each corner and at maximum 2'-0" (610 mm) around perimeter of light fixtures.
- .7 Attach exposed tees at centres required in good standard practice.
- .8 Install expansion joints in all main beams as required by U.L.C.
- .9 Provide angle wall mouldings at junctions of ceilings and vertical surfaces.

- .10 Provide spring clips to ensure tight installation, in rooms having an area less than 20 sq. ft. (1800 mm²).
- .11 Provide lay-in tile and grid to meet fire rating at all fire rated ceilings.
- .12 Erect ceiling system at required elevation and level to tolerance of 1/8" (3 mm) in 12'-0" (3660 mm).
- .13 Cut reveal edges to match factory detail at all reveal edge lay-in ceiling that needs cutting to fit grid size.

3. FIXTURE SUSPENSION

- 1. Make provisions for carrying flush mounted and recessed fixtures on suspended ceilings, using 4 hangers per fixture. Consult and coordinate with Electrical and Mechanical Trades.
- 2. The suspended ceiling system must comply with the current bulletin from the Electrical Inspection Department of Ontario Hydro regarding "Lighting Fixtures in Suspended Ceilings".
- 3. It is the responsibility of this contractor to supply the Architect with a letter stating that the suspension system is capable of holding the electrical fixtures as shown on the electrical drawings and as required by the above bulletin of the Electrical Inspection Department of Ontario Hydro.

4. MITRED JOINTS

- 1. "T" bar ceiling grid to be mitred at the outside corners.

5. ACOUSTICAL UNITS

- 1. Install acoustical units parallel to building lines to produce uniform borders and with edge units not less than 50% of unit width.
- 2. Accurately scribe and cut acoustical units to fit recessed items and adjacent work. Butt joints tight; terminate edges with moulding.

6. SPECIAL CLEANING

- 1. Keep acoustical panel installation and all components clean.
- 2. Remove and replace damaged or improperly installed units.

7. MECHANICAL EQUIPMENT ACCESS

- 1. Install "T" bar system to allow it to be removed easily at areas where mechanical units occur to allow units to be easily removed. NOTE: Stop main "T" on each side of equipment access.

8. IMPACT CLIPS

1. Install Impact Clip System at all acoustic tile ceiling areas indicated on drawings including rooms less than 20 sq. ft., (1800 sq. mm.) and all vestibules.

9. CERTIFICATION

1. Provide at completion of work a written certification that all ceiling conform to the requirements of the ULC design criteria for fire rated assemblies and that the suspended ceiling will provide adequate support electrical fixtures as per current bulletin of the ESA of Ontario Hydro.

END OF SECTION

PART 1 - GENERAL

1. GENERAL REQUIREMENTS:

1. Division One is a part of this Section and shall apply as if repeated here.

2. SAMPLES:

1. Submit full size tiles in duplicate, in each colour or design to be used, for approval of the Architect.

3. MAINTENANCE INSTRUCTIONS:

1. Submit 3 copies maintenance manual at completion of work in accordance with Section 01015.

4. DELIVERY, STORAGE AND HANDLING:

1. Deliver materials in original containers with manufacturer's seals and labels intact. Maintain temperature of storage area at 70°F (21°C) for 48 hours prior to installation.

5. ENVIRONMENTAL REQUIREMENTS:

1. Maintain minimum 70°F (21°C) air temperature at flooring installation area during installation and for 72 hours prior to and until floor area is occupied by Owner.

6. MAINTENANCE MATERIALS:

1. Leave 2% of each colour, type and size of tile installed, with Owner for replacement purposes. Clearly mark containers. Material shall be from same production run as the material installed.

7. PROTECTION:

1. General Contractor's Responsibility: In each location immediately following installation, protect new floors, if work is to be done after flooring installed with heavy cotton reinforced paper or polyethylene taped at joints and maintain in place until Architect gives instructions for the removal of temporary protection. Work shall be handed over to the Owner free of blemishes and in perfect condition.

PART 2 - PRODUCTS

1. MATERIALS:

1. VCT Primers and Adhesives: Environmentally friendly materials as recommended in writing by Flooring tile and base manufacturer, and approved by the Architect before application, to suit type of sub floor and

wall finish for this project. Adhesive shall produce good and waterproof bond between applicable substrate and tile. Use only Premier #71 by Flextile below all VCT or approved equal.

2. Sub-Floor Filler: Adrex SD-F Feather Finish TL 1000, TL Patch portland cement based filler by Ardex Engineered Cements and distributed by Brolain Distributors Ltd. (519-740-9311). Levelrock brand Super Smooth Patching Compound by C.G.C or Novoplan, Ultraplan 1 Plus, Ultraplan Easy are approved alternative products.
3. Sub-floor Filler and Leveller: White premix latex requiring water only to produce cementitious paste 2 part latex-type filler requiring no water as recommended by flooring manufacturer for use with their product.
4. VCT: - Vinyl Composite Floor Tile: 'Standard Excelon' series imperial texture composite floor tile by Armstrong only conforming to C.S.A. A126-1984. 12" x 12" x 1/8" thick (300 mm x 300 mm x 3.17 mm).

Note colors below to be confirmed with Architect prior to ordering for installation:

.1 Field Base Colour VCT is 51915 Charcoal.

5. Rubber Base: 1/8" (3.2 mm) thick, 4" (100 mm) as indicated, rubber cove base at resilient locations by Johnsonite. Colour to be 48 Grey. Use continuous coil rubber base not 4'-0" (1220 mm) lengths. Approved alternate manufacturers are Amtico and Roppe.
6. Cleaner: Neutral chemical compound as approved by tile manufacturers that will not damage tile or affect its colour.
7. Sealers and Waxes: Type recommended by flooring manufacturers for material type and location and shall be compatible with Owner's sealer and wax. Obtain Owner's approval of sealer and wax product prior to installing VCT.
8. Reducing Strip: strips in thickness as required. Colour as selected by Architect.
9. Metal Edge Trim: Aluminum or brass alloy with lip of edge extending under and with shoulder finishing flush with top of resilient flooring.
10. Concrete Floor Sealer: to C.G.S.B. 25-GP-20m Type 1.
11. Reducers / Transitions: One piece homogeneous polyvinyl chloride, installed using materials and methods per Manufacturer's written installation instructions. Colour: from Manufacturer's complete line. Style: SSR-XX-B by Johnsonite Inc..

PART 3 - EXECUTION

1. INSPECTION:

1. Maximum surface tolerance: Ensure floor surfaces are smooth and flat to plus or minus 1/8" (3.2 mm) over 10 ft. (3050 mm).
2. Ensure concrete floors are dry by using test methods recommended by manufacturer, and exhibit negative alkalinity, carbonization or dusting. Ascertain nature of curing and/or sealing compound used on concrete and its compatibility with flooring adhesive. Take all required remedial measures. Remove compounds if necessary to ensure that adhesive bonds to concrete.
3. Installation of any part shall constitute acceptance of these surfaces as satisfactory.

2. PREPARATION:

1. Remove sub floor ridges and bumps by light buff grind. Fill low spots, cracks, joints, holes and other defects with sub floor filler.
2. Clean floor and apply trowel and float filler to leave smooth, flat hard surface. Prohibit traffic until filler cured.
3. Split, bumpy or otherwise deformed tile resulting from improperly prepared base, will not be accepted.
4. Prime/seal concrete slab to resilient floor tile manufacturer's printed instructions.
5. Fill all low spots in flooring with high grade latex cement base flashing compound and gently blend in floor level at a rate of 1/8" per 1'-0" (10.5 mm per 100000 mm) to flush resilient flooring with ceramic tile, quarry tile, etc.
6. Power sand concrete floor smooth then dry vacuum clean entire floor area.

3. INSTALLATION - RESILIENT FLOOR TILES:

1. Apply adhesive uniformly to tile manufacturer's directions. Do not spread more adhesive than can be covered by tile before initial set takes place.
2. Lay flooring with joints and seams parallel to building lines to produce a symmetrical tile pattern unless noted otherwise. **Tile pattern shall be checkerboard type with all seams lined up in each direction and tile turned in opposite run directions to form checkerboard pattern.**

3. Install flooring with minimum tile width half full sizes.
 4. Distribute tiles having varying tones or texture evenly over entire floor area to avoid patches or streaks, and to produce homogeneous blend. Reject tiles having undue variations in colour, shade and texture.
 5. Make tile joints flush, uniform, in straight lines and as inconspicuous as possible.
 6. Install tile and colours to form patterns indicated on 9 series drawings.
 7. Set flooring in place, press with 100 lb. (45 kg.) minimum roller to ensure full adhesion.
 8. Cut tile and fit neatly around fixed or excessively heavy objects.
 9. Terminate flooring at centre line of door in door openings where adjacent floor finish is dissimilar.
 10. Install metal edge strips at unprotected edges of flooring.
 11. Use reducing strips at centre line below doors where resilient flooring meets concrete floor or quarry tile.
 12. Allow for random pattern and border in each classroom
4. INSTALLATION – BASE:
1. Layout base to keep number of joints to a minimum.
 2. Install straight and level to variation of plus or minus 1/8" (3.2 mm) over 10'0" (3050 mm) straight edge.
 3. Fill cracks and level irregularities of surfaces to which base is to be applied with filler approved by adhesive manufacturer so as to provide solid backing over entire area behind base. Cement cove base to vertical surfaces so that gaps do not occur behind base, so that front lip of base cove bears firmly and uniformly on floor surface, and so that good and permanent bond is produced between base and surface to which it is applied. Set base tightly in adhesive by using a 7 lb. (3 kg.) roller against wall and floor surfaces. Make end joints flush with gap.
 4. Scribe and fit to door frames and other obstructions.
 5. Cope internal corners.
 6. Use full length pieces where possible. Accumulated short lengths at base not permitted.

7. Supply straight base for carpeted areas and cove base for resilient flooring areas.
 8. Supply rubber base for all millwork bases.
 9. Gaps below bottom edge of base will not be accepted.
5. SPECIAL CLEANING AND WAXING OF VINYL COMPOSITION FLOOR TILE:
1. Clean off excess adhesive as work progresses from floor, base and wall surfaces without damage. Upon completion, remove all markings and heel scuffs.
 2. Upon completion of laying V.C.T., clean floors in accordance with manufacturer's printed instructions. Install two coats of sealer after installation and then three coats of wax.
6. PROTECTION OF FINISHED WORK:
1. Prohibit traffic on floor for 48 hours after installation.
 2. Protect floors as per item 1.7.1 in this Section.
 3. Clean floors and wax during final cleaning just prior to Owner occupying building.

END OF SECTION

1. GENERAL

1. GENERAL REQUIREMENTS

1. Division One is a part of this Section and shall apply as if repeated here.

2. SUBMITTALS

1. Submit 24" x 24" (600 mm x 600 mm) sample, in each colour or design to be used, for approval of the Architect.
2. Submit 12" (300 mm) long samples of each colour of rubber base.
3. Submit shop drawings in reproducible form in accordance with G.C. 3.11 of CCDC Document 2 - 2008 to show layout, treatment at walls, floor drawings, and other objects. Indicate details of proposed treatment, where flooring material meets other floor materials.

3. SPECIAL PROTECTION

1. Protect finished floors immediately after installation, using heavy cotton reinforced paper or polyethylene lapped 5" (125mm) with taped joints.

4. EXTRA MATERIALS

1. Upon completion of work, deliver to Owner where directed, all large scrap cuttings from flooring and a 12'-0" x 12'-0" (3600 mm x 3600 mm) piece of each design in each colour used.
2. Material to be wrapped packages and fully labelled as to product and colour.

5. ENVIRONMENTAL CONDITIONS

1. Maintain room, surface and materials at minimum temperature of 68 deg. F. (20 deg. C.), for three days before and during laying and after installation, and until floor area is occupied by Owner.

6. MAINTENANCE INSTRUCTIONS

1. Submit 3 copies maintenance manual at completion of work in accordance with Section 01015 - General Work.

7. DELIVERY, STORAGE AND HANDLING

1. Deliver materials in original containers with manufacturer's seals and labels intact. Maintain temperature of storage area at 70 degrees F. for 48 hours prior to installation.

8. WARRANTY

1. The warranty specified in Article GC 12.3 of CCDC Document No. 2, 2008 is to be extended for all work of this Section, including materials and workmanship for a period of five (5) years from the date of Substantial Performance.

9. COORDINATION WITH MECHANICAL CONTRACTOR

1. Coordinate with mechanical contractor the re-installation of existing floor drains and floor cleanouts to ensure proper water tightness.

2. PRODUCTS

1. MATERIALS

1. Primer and Adhesives: Environmentally friendly products as recommended by seamless floor manufacturer for specified material and which will produce good and permanent waterproof bond between applicable substrate and flooring.
2. Welding of Seams: welded to match flooring using products as recommended by sheet floor manufacturer for specified material.
3. Cleaner: Those recommended by flooring manufacturers.
4. Luxury Vinyl Plank Flooring (LVP): 2.5mm thick x 1000mm x 150mm Forbo, Allura Wood luxury vinyl tile plank flooring. Colour to be W60356 Grey Autumn Oak. Approved equal alternate by Polyflor, Johnsonite, or Mohawk.
5. Luxury Vinyl Tile Flooring (LVT1): 2.5mm thick x 914mm x 305mm width Polyflor, Expona Commercial PUR flooring. R10 slip resistant. Colour to be 5046 Dark Contour. Approved equal alternate by Armstrong, or Forbo.
6. Sheet Flooring (SHV1): 2.5mm thick x 250mm x 250mm Forbo, Marmoleum Modular, linoleum tile flooring. Colour to be t3354 Pumpkin Yellow. Approved equal alternate by Armstrong, or Polyflor.
7. Rubber Base (for areas where sheet flooring cove base is not specified): 1/8" (3 mm) thick, by 4" (100 mm)ht., coloured rubber coved base; Johnsonite Rubber Co., Roppe or Amtico. (NOTE: use rubber base supplied in roll form not 1220 mm 4'-0" lengths). Colours to be 48 Grey.
8. Sub-floor Filler and Leveller:
 1. White premix latex requiring water only to produce cementitious paste 2 part latex-type filler requiring no water as recommended by flooring manufacturer for use with their product.

2. Sub-floor Filler and Leveller: Ardex SD-F Feather Finished Portland Cement based filler by Ardex Engineered Cements and distributed by Centura.
9. Metal Edge Strips: Aluminum extruded smooth, mill finish polished lip to extend under floor finish, shoulder flush with top of adjacent floor finish.
10. Concrete Floor Sealer: to C.G.S.B. 25-GP-20M Type 1.
11. Accessories:
 1. Compass #901 Fillet Strip
 2. Compass Stainless Steel Cap-8 strip at cove bases
 3. Compass GE 25/35 Trench Drain Edging
 4. Compass Altroseal (matching)
 5. Compass CSL No. 160 Sealant
 6. Tarkett welding rod (matching)

3. **EXECUTION**

1. INSPECTION

1. Ensure floor surfaces are smooth and flat to plus or minus 1/8" (3 mm) over 10'-0" (3000 mm).
2. Ensure concrete floors are dry by using test methods recommended by manufacturer, and exhibit negative alkalinity, carbonization or dusting.
3. Installation of any part shall constitute acceptance of these surfaces as satisfactory.

2. PREPARATION

1. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with subfloor filler.
2. Clean floor and apply trowel and float filler to leave smooth, flat hard surface. Prohibit traffic until filler cured.
3. Split, bumpy or otherwise deformed flooring resulting from improperly prepared base, will not be accepted.
4. Prime/seal concrete slab sheet flooring by manufacturer's printed instructions.

5. Fill low spots in flooring with latex base flashing compound and gently blend in floor level at a rate of 1/8" per 1'-0" (10.5 mm per 10000 mm) to flush sheet flooring with ceramic tile, quarry tile, etc.
6. Machine sand concrete smooth then dry vacuum entire floor area immediately prior to application of adhesive.

3. INSTALLATION

1. Apply adhesive uniformly to manufacturer's directions and recommended trowel. Do not spread more adhesive than can be covered by flooring before initial set takes place.
2. Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width full material.
3. Run sheets in direction of traffic. Double cut sheet joints and continuously heat weld all joints according to manufacturer's printed directions.
4. Set flooring in place, press with 100 lb. (45 kg) minimum roller to ensure full adhesion.
5. Continue flooring over areas which will be under built-in furniture or appliances where flooring will remain visible. Cut flooring neatly around fixed objects.
6. Continue flooring through areas to receive moveable type partitions without interrupting floor pattern.
7. Terminate flooring at centre line of door in door openings where adjacent floor finish is dissimilar. Ensure smooth transition.
8. Terminate flooring 1.5 mm back from wall substrate and seal with Compass Altroseal in selected areas.
9. Install metal edge strips at unprotected or exposed edges where flooring terminates.
10. Install floor patterns as shown on drawings. Refer to Architectural drawings 9 series for grain direction.
11. Provide water tight seal to all pipes and projections coming through floor, using Compass Altroseal.
12. At new flush clamp drains remove clamping ring. Fix sheet flooring / linoleum flooring into body of drain and mechanically clamp with clamping ring. New drains should be surface clamp type; Enpoco E1000 F.C. Type, or similar.

4. INSTALLATION OF RUBBER BASE

1. Layout base to keep number of joints at minimum.
2. Set base in adhesive tightly by using a 7 lb. (3 kg.) hand roller against wall and floor surfaces. Install base tight to surface of flooring avoiding any gaps. Space joints uniformly.
3. Install straight and level to variation of plus or minus 1/8" (3 mm) over 10'-0" (3000 mm) straight edge.
4. Scribe and fit to door frames and other obstructions.
5. Cope internal corners.
6. Use full length pieces where possible. Accumulated short lengths of base not permitted.

5. SPECIAL CLEANING

1. Clean off excess adhesive as work progresses from floor, base and wall surfaces without damage.
2. Upon completion of laying, clean floors in accordance with manufacturer's printed instructions and leave ready for sealing and waxing by Owner.

6. PROTECTION OF FINISHED WORK

1. Protect new floors from time of final set of adhesive after initial waxing, until final waxing and final inspection.
2. Prohibit traffic on floor for 48 hours after installation.

End of Section

1. **GENERAL**

1. GENERAL REQUIREMENTS

1. Division One, General Requirements, is a part of this Section and shall apply as if repeated here.

2. SUBMITTALS

1. Samples

1. Prepare samples of various finishes for Architect's approval either on site or by submitting samples as directed, at least thirty days before materials are required. Submit samples in triplicate on 8" x 12" (200 mm x 300 mm) material. Identify each sample as to job, finish, formula, colour name, number, sheen name and gloss units, date and name of Subcontractor.

3. PRODUCT HANDLING

1. Delivery and Storage

1. Deliver materials to site in their original containers with label intact and store in spaces directed by Architect. Keep stored materials covered at all times and take all necessary precaution against fire.
2. Provide CO2 fire extinguisher of minimum 20 lbs. (9 kg.) capacity in storage area.

4. ENVIRONMENTAL CONDITIONS

1. Do not paint or finish in unclean or improperly ventilated areas. Do not paint in temperatures lower than 50 degrees F. (10 degrees C.) or varnish in temperatures lower than 65 degrees F. (18 degrees C.) for 24 hours before, during and 48 hours after application.
2. Test for moisture content in each location immediately before commencing application of paint. Do not apply paint on surfaces where moisture content exceeds 14%. Promptly notify Consultant if such conditions are encountered.
3. Provide approved equipment for testing moisture content of surfaces to receive paint finishes and have available on Site at all times during Work of this Section.
4. Do not apply paint finish in areas where dust is being generated.

5. PROTECTION

1. Provide metal pans or adequate tarpaulin to protect floors in areas assigned for the storage and mixing of paints.
2. Use sufficient drop cloths and protective coverings for the full protection of floors, furnishings and work not being painted.
3. Leave above areas clean and free from evidence of occupancy upon completion of painting.
4. Protect paint materials from fire and freezing.
5. Keep waste rags in metal drums containing water and remove from building at end of each working shift.

6. RELATED WORK SPECIFIED ELSEWHERE

1. Read carefully all other Sections of the specifications to determine the extent of prime and finish coats applied by others.

7. SCOPE OF WORK

1. NOTE: In locations where Drawings do not call for paint or similar finish on walls and/or ceilings, the intent of this Specification is that all exposed unpainted metal surfaces shall be painted.
2. Paint exposed drywall and the like in locations where finish is not otherwise specified or noted.
3. In locations where Drawings do not call for paint or similar finish on walls and/or ceilings, the intent of this Specification is that items such as new work, including miscellaneous metal work, shall be painted.
4. Paint pipes, conduit, ducts and prime paint all exposed mechanical and electrical equipment and supports.
5. Do not paint pipe, conduit, ducts, insulation and the like where concealed above ceilings (except louvred type ceilings) or in service shafts.
6. Make good paint finish on shop coated work where damaged.
7. Paint visible portions of structural steel.
8. Paint all edges and all faces of doors where primed for paint supplied.
9. Interior of ducts and diffusers visible from exterior on room side.

10. Allow for three (3) different paint colours to be used in the renovation area - including field, accent walls and bulkheads.

8. QUALITY ASSURANCE AND REFERENCES

1. Paint work shall meet or exceed standards set out in C.G.S.B. Specification No.'s 85-GP-1M to 85-GP-33A and C.P.C.A. Canadian Painting Contractors Association - Painting Manual.
2. Employ fully trained workers who are regularly employed in this field.
3. Manufacturer's sales representative shall perform inspections on the Owner's behalf in order to ensure compliance with product specifications.

9. RETOUCHING

1. Do all retouching, etc. to ensure that the renovated area may be handed over to the Owner in perfect condition, free of spatter, finger prints, rust, watermarks, scratches, blemishes or other disfiguration.

10. TEST AREA

1. A room or area in the building will be designated by the Architect as a test area to establish standard of workmanship, texture, gloss and coverage.
2. Prior to any painting being started, request a meeting on Site between Architect, Contractor, Subcontractor and Material Manufacturer's Representative to review conditions, surfaces, anticipated problems and to clarify quality of workmanship acceptable to Architect.
3. Apply finishes to each type of surface within room with correct material, coats, colour, texture and degree of gloss in sample area and have same approved prior to providing Work of this Section.
4. Retain test area until after completion of Work. Test area to be minimum standard for the Work.
5. Failure to comply with the above will be cause for Architect to request all Work previously painted to be repainted.

2. PRODUCTS

1. MATERIALS

1. "Top Line" products only are acceptable. Use only products of manufacturers whose best quality lines meet or exceed CGSB Specifications for the particular type of material required. Approved manufacture and product unless specifically indicated otherwise in specification:

1. Paints:
Sherwin Williams

Note: Colours will be selected from Sherwin-Williams colour system. Sherwin-Williams colour formulas must be matched if one of the other approved manufacturers are being used.

P1: SW 7007 Ceiling Bright White, Sherwin Williams, eggshell on walls, matte on ceiling.

P2: SW 7019 Gauntlet Gray, Sherwin Williams, semigloss, HM door frames.

P3: SW to be determined, Sherwin Williams, matte, drywall ceiling – recessed bulkheads in Room 101.

P4: SW 9033 Baby Bok Choy, Sherwin Williams, eggshell, accent.

P5: Reserved.

P6: SW 6670 Gold Crest, Sherwin Williams, eggshell, accent.

2. Latex Water Based Epoxy
 - Sherwin Williams B70W00211 - Waterbased catalyzed epoxy extra white/Tint base A/B60V00025 - Waterbased Catalyzed epoxy Semi Gloss Hardner Part B
 - Glidden - 4420 - True Glaze Waterborn epoxy / 4426 True Glaze semi gloss converter
3. Latex Supper Adherent Primer,
 - General Paint 51-050 Premium Latex Plastic Primer
 - Benjamin Moore #23-00 Freshstart Acrylic Primer Sealer
 - Zinsser 1-2-3 Acrylic Primer Sealer
 - Sherwin-Williams - B51WQ8850 - Adhesion Prm White
 - Glidden Latex super undercoat 94280
4. Thinners, cleaners: Type and brand recommended by the paint manufacturer.
5. Materials to be new and first line of manufacturer.
6. Deliver materials to site in original unbroken containers bearing brand and manufacturer's name.

3. **EXECUTION**

1. CONDITION OF SURFACES

1. Check all surfaces with electric moisture metre and do not proceed if reading is higher than 12-15 without written permission from Architect.
2. Proceed with work only when surfaces and conditions are satisfactory for production of a first class job.

3. Clean and remove dust, grease, rust and extraneous matter from all surfaces (except that rust occurring on items specified to be primed under other sections shall be removed and worked reprimed under these sections).
4. The commencing of work in a specific area shall be construed as acceptance of the surfaces, and thereafter the contractor shall be fully responsible for satisfactory work as required herein.
5. All surfaces shall be prepared in accordance with Chapter 2 for Interior Work of the Master Painters and Decorators Association Painting Manual latest edition.
6. Prepare surfaces in accordance with paint covering manufacturer's instructions.

2. PREPARATION

1. Metal

1. All metal surfaces to receive coatings shall be cleaned to SSPC-SP1 (solvent washing) prior to painting as specified herein.
2. Touch-up shop primed metal after first removing loose primer, rust, oil, grease and other contaminants.
3. All metal surfaces exposed and/or exhibiting rust shall be cleaned to SSPC-SP2 or SSPC-SP3 standards and primed with an approved rust inhibitive primer prior to recoating as specified.
4. Feather edges to make touch-up inconspicuous when applying new primer.
5. Conform to CGSB 1-GP40d.M to CGSB 85-GP-14M.

1. Hardware

1. Remove finishing hardware, electric cover plates and accessories, mask any that are not removable. Replace these when paint is dry and clean them. Do not clean hardware with solvent that will remove permanent lacquer finish.

2. Gypsum Wallboard

1. For small holes, scratches or other surface marks fill with patching compound and sand smooth.
2. For larger holes or damaged areas do not proceed until trade for original work has filled or repaired surfaces to acceptable levels.
3. Prepare wallboard surfaces to CGSB-85-GP-33M.

3. General

1. Mask specification plates occurring on equipment, switch boxes, and similar items requiring painting.
2. Protect, remove and replace hardware, accessories, lighting fixtures and similar items as required.
3. Conform with Architect's colour schedules and exactly match approved samples.

3. APPLICATION

1. Finishes and number of coats specified in the schedule are intended to cover surfaces perfectly. If they do not, apply further coats until perfect coverage and colour are achieved as required.
2. Any areas exhibiting incomplete or unsatisfactory coverage shall have the entire plane painted. Patching will not be acceptable.
3. Walls needing repainting, entire wall (plane) shall be painted to the satisfaction of the Architect. See drawings for extent of work.
4. Spray painting will not be permitted unless specifically approved in writing by the Architect in each instance. Architect may withdraw approval at any time and prohibit spray painting for reasons such as carelessness, poor masking or protection measures drifting paint fog, disturbance to other Trades or failure to obtain a dense, even, opaque finish. Spray painting shall be full double coat, i.e. at least two passes for each coat. Do not use spray or roller on wood or metal surfaces, brush only unless approved in writing by Architect.
5. Arrange to have traffic barred from completed areas wherever possible.
6. Apply materials in strict accordance with manufacturer's directions and specifications and be familiar with these directions and specifications.
7. Apply primer-sealer coats by brush or roller method. All primers and undercoats to be tinted to no more than 25% of intensity of the finish colour.
8. Permit paint to dry before applying succeeding coats, touch up suction spots and sand between coats with No. 00 sandpaper.
9. Where two coats of the same paint are to be applied, the first coat shall be the same colour as the finish coat and be inspected by the Architect before application of final coat, to allow the Architect to make reasonable modification of colour if necessary. Furnish Architect with a schedule showing expected completion of the respective coats of paint for the various areas and surfaces. Keep this schedule current as the job progresses.
10. Deep/intense interior and exterior colours shall be from the nearest factory

premixed colour selection and shall be alterable to match required colours.

11. Flat and semi-gloss finishes on gypsum wall board, block and other surfaces of large areas shall be applied by roller and to all other surfaces applied by brush.
12. Paint shall be uniform in sheen, colour and texture, free from brush or roller marks, sags, runs or other defects.
13. Remove rust, oil, grease and loose shop paint from metal work by brushing or with wire brushes and make good shop coat before proceeding with final finish. Feather out edges to make touch up patches inconspicuous.
14. After first coat, fill nail holes, splits, and scratches, using putty coloured to match finish.
15. Clean castings with wire brush before application of first paint coat.
16. Remove form oil or parting compounds from concrete surfaces. Use Xylol or approved compound.
17. Paint interior of pipe spaces, ducts, etc. visible through grilles or through metal ceilings in black matt finish.
18. Conform with Architect's colour schedule and exactly match approved samples.

4. ADJUST AND CLEAN

1. Cracks occurring in walls or ceilings requiring patching during "warranty period" shall be repainted in such a way that the patch is not visible at a distance of 5'-0" (1500 mm).
2. If patch painting not acceptable repaint entire wall or ceiling surface.
3. At completion clean entire area of surplus materials and equipment.

5. FIELD QUALITY CONTROL

1. Locate testing area in building to establish standard of workmanship, texture, gloss and coverage where designated.
2. Apply samples of all finishes on each type of surface to be coated with correct material, number of coats, colour, texture and degree of gloss required.
3. Retain test area until completion of work. Use approved work in test areas as standard for corresponding work throughout building. Correct and

refinish work which does not compare with approved finishes.

6. FINISH SCHEDULE

1. General

1. Finish the listed exposed surfaces, wherever they occur unless such surfaces are specifically noted to be left unfinished.
2. Exposed means visible in the completed work.
3. In instances where materials specified are not suitable for a particular job application, or are contrary to manufacturer's recommendations for use on a particular surface, such condition shall immediately be brought to the attention of the Architect for clarification and instructions.
4. Finishes shall match approved samples but Architect reserves the right to make reasonable changes to finish specifications to obtain desired results without additional cost or obligation of Owner.
5. A colour chart giving colour schemes for various areas will be prepared after tendering, by the Architect. The final selection of colours and surface textures of all finishes throughout and whether finishes are transparent (natural) or opaque (paint) shall rest solely with the Architect.
6. Where surfaces have been disturbed the entire plane shall be painted.
7. General Notes
 1. See drawings for locations of areas where more than one colour occurs on one wall and one ceiling plane.

7. MAINTENANCE MATERIAL

1. Provided one sealed can of four litre capacity, of each product in each colour used in the Work for Owner's use in maintenance work.
2. Container to be new fully labelled with manufacturer's name, type of paint, and colour.
3. Provide Owner 3 copies of paint formula for each colour and type of paint for Owner's maintenance manual.

END OF SECTION

1. GENERAL

1. GENERAL REQUIREMENTS

1. Division One - General Requirements, is part of this section and shall apply as if repeated here.

2. RELATED WORK SPECIFIED ELSEWHERE

1. Masonry - Section 04200
2. Rough Carpentry – Section 06100
3. Ceramic and Porcelain Tile – Section 09300
4. Washroom Accessories - Section 10800

3. QUALIFICATIONS

1. Manufacturers approved for the work of this section are:
 1. Hadrian Inc. 965 Syscon Road, Burlington, ON L7L 5S3 CANADA.
Tel: (905) 333-0300. Fax: (905) 333-1841.
 2. Bobrick Washroom Equipment of Canada Ltd. - Scarborough,
Ontario, (416) 298-1611.
 3. Ampco Products Inc., distributed by W.G. Wood Sales Ltd.; (416)
222-1187.
 4. General Storage Systems distributed by Nanasi Corporation Ltd.
(519) 657-2464.

4. SHOP DRAWINGS

1. Submit shop drawings in reproducible vellum form in accordance with GC 3.11 of CCDC Document 2 - 2008.
2. Before shop drawings and fabrication are started, take critical measurements of the site to facilitate installation and fitting of work.

5. SAMPLES

1. Submit samples of hardware, colour and finish to be selected by Architect from manufacturers full range.

6. STANDARDS

1. To establish a standard for tendering purposes, the drawings and these

specifications are based on steel partitions manufactured from Hadrian Inc.

7. SCOPE OF WORK

1. Provide hollow sheet steel compartments and cubicles where indicated on drawings.

2. PRODUCTS

1. GENERAL

1. Toilet Partitions: Steel, floor mounted, overhead braced steel toilet compartments as manufactured by Hadrian Manufacturing Inc., Burlington, Ontario, or approved alternate manufacturer.
2. Stainless Steel: Conforming to ASTM A66-72-1979, Type 302 or 304, satin finish.
3. Honeycomb Core: Kraft paper, uniformly expanded to max. cell size of 25mm (1").
4. Slide Bolt and Keeper: Stainless steel with emergency access.
5. Door Stop: Stainless steel door stop complete with rubber insert.
6. Robe Hook: Stainless steel robe hook. **Do not install hooks but hand over to owner.**
7. Door Pull: Stainless steel for handicapped units.
8. Fasteners: Stainless steel tamper proof type. One-way theft-proof thru-bolt on all door hardware and mounting brackets.
9. Anchors: as recommended by partition manufacturer.
10. Prime Paint: Alkyd primer for baking to meet or exceed quality specified in CGSB specification 1-GP-81, or phosphate treatment.
11. Baked Enamel: Alkyd enamel for baking to meet or exceed quality specified in CGSB specification 1-GP-81.

2. FABRICATION

1. Toilet compartments shall be floor mounted and overhead braced.
2. Doors, partitions and pilasters shall be faced both sides with 20 ga. steel face sheet to ASTM A 653/A 653M Grade 33 sheet of panel flatness,

galvannealed to A60/ZF180 coating.

3. Cores of doors, partitions and pilasters shall be honeycomb with max. 25mm (1") cell size, compressive strength of 213KPa (31psi) laminated under pressure to face sheets.
4. Work shall include three (3) panel brackets per panel, pilaster attachments, stainless steel piano hinge, two (2) door stops per door, latches, pilaster shoes and bumpers.
5. Finish to be high performance powder coating, electrostatically applied and oven cured to a smooth uniform finish. Two colours to be as selected by Architect for each school project from manufacturer's standard range of 14 colours.
6. All components shall be thoroughly cleaned.

3. EXECUTION

1. INSTALLATION

1. Work shall include installation of all components of toilet compartments, including a modesty screen adjacent to urinals and sinks where indicated with floor to ceiling and support post.
2. Fasten pilasters to floor by fitting over an internal floor channel. Fasten channel, which allows pilasters to have vertical adjustment, to floor with two connections. Fasten a 3" (76 mm) high polished stainless steel base to floor channel and bottom of pilaster.
3. Set partitions and doors 12" (305 mm) above the finished floor.
4. Partitions and doors shall be 58" high (1470 mm). Pilasters shall be 85" (2175 mm) high.
5. Doors shall be 24" (600 mm) wide and 2'-10" (864 mm) in handicapped areas.
6. Toilet and shower compartments shall be width indicated by 5'-0" (1525 mm) deep, or as required. Provide closure pilasters as required at end units of compartment banks. Handicap compartment minimum size to be as current Ontario Building Code requirements.
7. Fasten all pilasters and partitions to masonry walls with three (3) "U" brackets.
8. Modesty screens if required, shall be 2'-0" (600 mm) wide x 58" (1470 mm)

high with floor to ceiling support post to same construction as toilet partitions.

9. Compartments shall conform to Barrier Free Design requirements of the Ontario Building Code as currently amended.

End of Section

1. **GENERAL**

1. **GENERAL REQUIREMENTS**

1. Division One, General Requirements, is part of this Section and shall apply as if repeated here.

2. **SHOP DRAWINGS**

1. Submit shop drawings in reproducible vellum form in accordance with GC 3.10 of CCDC Document 2-2008 and Section 01300 – Submittals.
2. Submit catalogue illustrations as required by Architect.
3. Indicate size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in-frame, building-in details anchors for grab bars.

3. **SUBMITTALS**

1. Submit samples of all accessories for approval by the Architect.
2. Approved manufacturers are Bobrick, Frost, ASI.

4. **DELIVERY, STORAGE AND HANDLING**

1. Package accessories and label with description of contents and installation location. Each accessory to be individually wrapped complete with all fixings as required.
2. Deliver accessories where designated at Site by Contractor.

5. **MAINTENANCE AND OPERATING INSTRUCTIONS**

1. Provide for inclusion in data book, three (3) printed copies of maintenance and operating instructions of all accessories.

2. **PRODUCTS**

1. **MATERIALS**

1. Sheet Steel: Commercial grade, stretcher levelled sheet steel to ASTM A526-71 (1975) with G90 zinc coating to ASTM A525-79.
2. Stainless Steel Sheet: To ASTM A666-72 (1979) type 302 with No. 4 finish, minimum 0.9 mm (0.036"/20 gauge).
3. Stainless Steel Tubing: AISI Type 304, commercial grade, seamless welded, 1.2mm (0.047") wall thickness.
4. Fasteners: Screws and bolts hot dip galvanized. Expansion shields fibre,

lead or rubber as recommended by fixture manufacturer for component and its intended use.

5. Fasteners: Screws and bolts stainless steel. Expansion shields, lead or rubber as recommended by fixture manufacturer for component and its intended use.

2. FINISHES

1. Chrome and Nickel Plating: to ASTM B456-79 satin finish.
2. Stainless Steel: to AISI No. 4 satin lustre finish.

3. TRADEMARKS AND LABELS

1. Trademarks and labels shall not be visible in the finish exposed surfaces.

4. MANUFACTURER

1. Provide accessory items manufactured by companies as noted or approved equal; Bobrick, Frost and ASI are approved manufacturers.

5. ACCESSORIES

1. Mirrors: All mirrors to be fixed, tempered glass. Install one per each washroom lavatory location unless otherwise indicated on drawings.

1. Fixed Mirror (M): Bobrick Model No. B-165-1836, stainless Steel Channel Frame Mirror, 18" (456mm) wide x 36" (914mm) high.

2. Contractor to install all items supplied by owner.

6. FABRICATION

1. Weld, ground flush and smooth joints of fabricated components. Use mechanical fasteners only when approved.
2. Form exposed surfaces from one sheet of stock, free of joints.
3. Brake form sheet metal with 2 mm radius bends.
4. Form flat surfaces without distortion. Maintain flat surfaces without scratches or dents.
5. Paint back of components where contact is made with building finishes to prevent electrolysis.
6. Hot dip ferrous metal anchors and fastening devices to conform with CGSB G164.

7. Shop assemble and package components complete with anchors and fittings.
8. Deliver inserts and rough-in frames to site at appropriate time for building in. Provide templates or rough-in measurements as required.
9. Provide steel anchor plates and components for installation on studing and building framing.
10. All exposed stainless steel edges to be hemmed.
11. All stainless steel units to be double panned.

3. EXECUTION

1. INSTALLATION

1. Installation of all miscellaneous specialties by this Section. Install all items to secure backing.
2. Securely fasten accessories level and plumb in the locations shown on the drawings and as specified herein. Mounting heights as shown on drawings, or as directed by Architect.
3. Co-ordinate installation with the work of trades providing adjacent construction as required to achieve the reveals or other edge conditions shown where front faces of units are flush with the finished wall surfaces.
4. Perform drilling of steel, masonry and concrete necessary to install the accessories.
5. Insulate accessory surfaces to prevent electrolysis due to contact with masonry, concrete or dissimilar metal surfaces. Use bituminous paint, building paper or other approved means.
6. Clean all accessories in conformance with Division 1.

2. LOCATION AND QUANTITY

1. Provide washroom accessories as noted as indicated on drawings and/or called for within this section. Installations shall meet the minimum requirements of the O.B.C., as currently amended.

END OF SECTION

19-524A - Tender for Interior and Exterior Renovations at the Milton Innovation Centre

Opening Date: May 8, 2019 5:00 PM

Closing Date: May 29, 2019 11:00 AM

Schedule of Prices

The Bidder hereby Bids and offers to enter into the Contract referred to and to supply and do all or any part of the Work which is set out or called for in this Bid, at the unit prices, and/or lump sums, hereinafter stated. HST is additional. In lawful money of Canada.

The first table is a Summary Table which provides your Sub-Total for each pricing table and also indicates whether or not the table is mandatory or not. Asterisk's within the table denotes a "MANDATORY" line item.

If the line item and/or table is "NON-MANDATORY" and you are not bidding on it, leave the table and/or line item blank. Do not enter a \$0.00 dollar value unless you are prepared to provide the line item at zero dollars to the Owner.

If a table is "NON-MANDATORY" and you are bidding on it, you must bid on all line items with an asterisk.

If there are multiple tables, you must click the "EDIT PRICING" button inside the Summary Table to display the applicable Pricing Table that you wish to bid on.

Base Bid

The following prices include all labour, materials, installation, overhead, profit and all relative charges of the Contractor and represent the actual cost to the Owner (exclusive of HST). HST will be calculated and shown separately on the Tender Summary. The prices set out below shall be used for computing additions and deletions from the estimated Contract Price included in the Contract. The adjustment of the estimated Contract Price shall be based upon the net measured quantity differences from the estimated quantities identified below:

Item	Description	Quantity	Unit	Unit Price *	Total
1	General Requirements	1	LS		
2	Mobilization	1	LS		
3	Demolition (Interior and Exterior)	1	LS		
4	Flooring Finishes	1	LS		
5	Wall Finishes	1	LS		
6	Ceiling Finishes	1	LS		
7	Interior Partition Assemblies	1	LS		
8	Doors, Frames, Hardware	1	LS		
9	Millwork	1	LS		
10	Exterior Cladding System	1	LS		
11	Refinishing of Exterior Window Frames	1	LS		
12	Electrical	1	LS		
13	HVAC	1	LS		
14	RTU -8 replacement	1	LS		
15	Plumbing (Including fixtures)	1	LS		
16	Close-Out Documents, O&M Manuals, AS-Built Drawings	1	LS		
Subtotal:					

Cash Allowances

The following prices include all labour, materials, installation, overhead, profit and all relative charges of the Contractor and represent the actual cost to the Owner (exclusive of HST). HST will be calculated and shown separately on the Tender Summary. The prices set out below shall be used for computing additions and deletions from the estimated Contract Price included in the Contract. The adjustment of the estimated Contract Price shall be based upon the net measured quantity differences from the estimated quantities identified below:

Item No	Description	Quantity	Unit	Unit Price	Total
CA-1	Inspection and Testing: Testing of vapour barrier in ground floor assembly	1	LS	\$5,000.0000	\$ 5,000.00
CA-2	Hazardous Material Removal and Disposal: For any discovered items not identified in reports	1	LS	\$5,000.0000	\$ 5,000.00
CA-3	Door Hardware	1	LS	\$6,000.0000	\$ 6,000.00
CA-4	Security Systems	1	LS	\$2,000.0000	\$ 2,000.00
Subtotal:					\$ 18,000.00

Seperate Pricing

The following prices include all labour, materials, installation, overhead, profit and all relative charges of the Contractor and represent the actual cost to the Owner (exclusive of HST). The prices set out below shall be used for computing additions to and deletions from the estimated Contract Price included in this Contract.

Note: This section will not be included in the Base Bid Tender Summary Amount.

Item No	Description	Unit	Lump Sum Price *
SP-1	NEW TOILET COMPARTMENT PARTITIONS - Provide pricing for the removal of existing washroom toilet compartment partitions in their entirety from existing Washrooms 104 and 105. Install new washroom compartment partitions as described in written specifications.	LS	
SP-2	NEW TOILETS - Provide pricing for the removal of (6) existing, floor mounted, water closets. Install (2) new barrier free water closets and (4) standard water closets as described on Mechanical design drawing M0.2 Section 15400 Plumbing Item 2.1.5 and 2.1.4	LS	
SP-3	CEILING DETAIL FOR ROOM 101 - Provide pricing for alternate bulkhead design in Meeting Room 101 in all (5) locations. Bulkheads to align with existing skylights and are currently detailed with gypsum board and metal stud framing. Alternate design for separate price is detailed on 5/A6.1 and 6/A6.1 with suspended acoustic tile, t bar grid and transition strips.	LS	
SP-4	ADDITIONAL FLOORING IN SERVER ROOM - Provide pricing for removal of the existing flooring system beneath the existing server equipment in the ex. Computer Server Room 107 as identified on drawing D2.1 and the installation of new VCT tile beneath this equipment area. New VCT to match adjacent specified flooring. The temporary relocation of the existing server equipment is to be by the Owner's IT forces. All work inside of this security cage is to be coordinated with the Owner's IT department.	LS	

Summary Table

For Bid Results - Only the Total Contract Amount will be made publicly available.

The HST calculation will re-calculate when Unit Pricing is entered by the Bidder.

Bid Form	Amount
Base Bid	
Cash Allowances	\$ 18,000.00
HST (13%)	\$ 2,340.00
Total Contract Amount:	

Specifications

Statement A - Bidder's Experience in Similar Work

NOTE TO BIDDER: Refer to Information for Bidders.

Bidder to Complete Statement A - Tenderer's Experience in Similar Work.

Year Completed	Description of Work	Agency/Company Name	Contact Name, telephone and email address	Value

Statement B - Bidder's Senior Staff

NOTE TO BIDDER: Refer to Information for Bidders.

Bidder to Complete Statement B - Bidder's Senior Staff.

Name	Position	Qualifications & Experience in current position

Subcontractors

The Bidder shall state all Subcontractor(s) and type of Work proposed to be used for this project. Bidders shall not indicate "TBD" (To Be Determined) or "TBA" (To Be Announced) or similar wording and shall not indicate multiple choices of Subcontractor names for any Subcontractor category in their list of Subcontractors. One Subcontractor name shall be indicated for each Subcontractor category.

The Bidder shall **state only one (1) subcontractor for each type of work**

Statement C - List of Subcontractors

NOTE TO BIDDER: Refer to Information for Bidders.

Names and addresses must be filled in and submitted with the electronic tender. If a subcontractor is not to be used for any work listed, then show "by own forces".

The Bidder agrees the list provided is a complete list of subcontractors that will be required in the performance of the Work and that no additions, deletions, or changes to this list will be permitted after closing of tenders.

The total value of work sublet, shall not exceed 50% of the total tender.

By clicking here I confirm that there are no Subcontractor(s) and the Bidder shall perform the project with their "OWN FORCES".

Sub-Trade	Name of Sub-Contractor & Address	Value of Work (\$)

Documents

Ensure your Bid submission document(s) conforms to the following:

1. Bonds, if requested, must be in digital format (e-bond). A scanned PDF copy of bonds are NOT acceptable.
2. All other documents should be in PDF format and not provided in any other format.
3. The Owner may reject any Bid where any document(s) cannot be opened and viewed by the Owner.
4. If a Bidder requires to upload more than one (1) document, the Bidder should combine the documents into one Zipped file, as per instructions stated below.

If uploading a zipped file containing more than one (1) document, please ensure each document is named in relation to the submission format item responding to, as an example, if responding to a category named Previous Experience save the document as "Previous Experience".

BID BOND AND AGREEMENT TO BOND

The Town will only accept submissions that include both the Bid Bond and Agreement to Bond in an electronically verifiable/enforceable (e-Bond) format. A scanned pdf copy of bonds are NOT acceptable.

Note to Bidder: Should the Surety Company or Broker provide both the digital Bid Bond and Agreement to Bond together in one zipped file, the bidder should upload the same zipped file containing both bonds for the Bid Bond AND the Agreement to Bond uploads. The one zipped file from the Surety company should not be taken apart or unzipped otherwise the e-bonds will not validate.

- Digital Bid Bond (eBond) * (mandatory)
- Digital Agreement to Bond (eBond) * (mandatory)

Instructions to compress (or zip) a file or folder, follow these steps

1. *Locate the file or folder that want to compress.*
2. *Right-click the file or folder, point to **Send to**, and then click **Compressed (zipped) folder**.*

*A new compressed folder is created in the same location. To rename it, right-click the folder, click **Rename**, and then type the new name.*

To upload a document follow these steps

1. *Click on the browse button to locate the file on your computer or network*
2. *Click the upload button*
3. *After the file has been successfully uploaded, a link to the document will appear on the screen, along with the time/date that it was uploaded.*
4. *If you have completed your document upload and are ready to finalize your submission then click the "Continue with Submission" button at the bottom of the screen. Or you may save and come back later.*
5. *If you need to remove the document, click the remove button next to the document name.*

Addenda, Terms and Conditions

DECLARATION

I/WE having carefully examined the locality and site of the proposed works, and all contract documents relating thereto, including the Form of Tender, Information for Bidders, General Conditions, Supplemental Conditions, Special Provisions, Specifications, Drawings and and all Addendum(s) issued, tender and offer to enter into a contract within the prescribed time to construct the work in strict accordance with the Contract Documents and such further detail drawings as may be supplied from time to time and to furnish all materials, labour, tools, plant, matters and things necessary therefore to complete and ready the works withing the time specified for the sum of the Total Tender Contract Amount (including applicable taxes).

The Bidder declares that this tender shall remain open for acceptance by the Town for 90 days following the date of tender closing.

The Bidder agrees, if this tender is accepted, to supply any additional materials and equipment and to execute any additional work or to delete any work as may be required in strict conformity with the contract, and that the prices applicable to additions to the Work, or deletions therefrom shall be determined in accordance with the Supplemental General Conditions and the General Conditions.

The Bidder has read and understood all addendum(s) issued during the tendering period and taken into account by him/her/it in preparing the tender.

The Bidder agrees to commence work within seven days from the date of receipt of instructions to do so from the Project Consultant and to complete all work by the completion date outlined in the Contract documents.

The Bidder further declares that this Tender is made without any connection, comparison of figures, or arrangements with, or knowledge of, any other corporation, firm or persons making a tender for the same work and is in all respects fair and without collusion or fraud.

The Bidder further declares that no member of the Town and no officer or employee of the Town is or will become interested directly or indirectly as a contracting party, partner, shareholder, surety or otherwise in the performance of the contract, or in the supplies, work or business to which it relates, or in any portion of the profits thereof, or in any of the monies to be derived therefrom unless otherwise stated.

The Bidder agrees that this tender will be included in a formal contract to be prepared and executed.

Lowest or any tender not necessarily accepted.

That if the Tender is accepted, the Bidder agrees to furnish bonds as specified in the Information for Bidders and to execute the agreements and bonds in triplicate within seven (7) Working Days after notification of acceptance of this Tender by the Town.

That in the event of failure to do so, the Bidder agrees that the Bid Bond made with this Tender shall be forfeited to the Owner and that the Owner may accept any other Tender or call for new Tenders.

Digital Bid Bond - We enclose herewith a Digital Bid Bond in the value of not less than 5% of our stipulated price as outlined below. It is understood that the Bid Bond shall be valid for the bid acceptance period, the bidder will provide a Performance Bond and a Labour and Materials Payment Bond in the specified amount.

Digital Agreement to Bond - We enclose herewith a Digital Agreement to Bond,

Contract - If we are notified of the acceptance of this Tender within ninety (90) calendar days, we will:

1. Execute the Contract Documents in triplicate
2. Furnish a Performance Bond in the amount equal to One hundred percent (100%) and a Labour and Material Bond in the amount equal to fifty (50%) of the amount of the Contract, in the forms required by the Construction Act as per the terms of the contract.
3. Maintenance Security to be covered by the Performance Bond or Maintenance Security as a standalone Bond
4. Provide a Certificate of Insurance as outlined in the Contract documents.
5. Any other stipulated documentation

ACKNOWLEDGEMENT

We have downloaded, read, understood and agree to abide by all information contained in the Bid Document and the person named below has the authorization by the Bidder to bind the firm.

The bidder shall declare any potential conflict of interest that could arise from bidding on this bid.

Yes No

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid Document. Please check the box in the column "**I have reviewed this addendum**" below to acknowledge each of the addenda.

File Name

**I have reviewed the
below addendum and
attachments (if
applicable)**

Pages

There have not been any addenda issued for this bid.