

SPECIFICATION

CVRIS UPGRADES

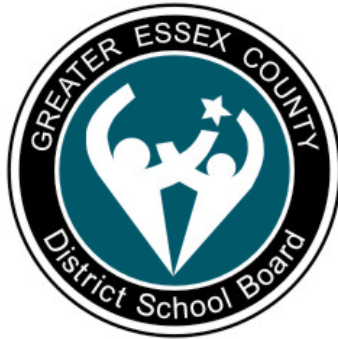
Tender No. 2021-73T

**MD Bennie Public School
Harrow Public School**

Issued for: General Contract Tender

C L I E N T

Greater Essex County District School Board
Windsor, Ontario



C O N S U L T A N T



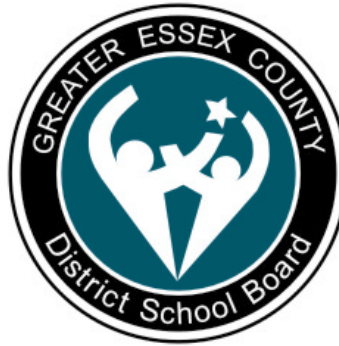
Windsor, Ontario

GLOS PROJECT NO. 21018

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REQUEST FOR TENDER

#2021-73T

**CVRIS UPGRADES TO MD BENNIE & HARROW PUBLIC SCHOOL
GENERAL CONTRACTOR TENDER**

1.0 DEFINITIONS

.1 The following definitions shall apply to all tender / *Contract Documents*:

- a) "*Bid*" means the Tender submission by a *Bidder*.
- b) "*Bid Form*" means the Greater Essex County District School *Board*'s Price *Bid Form* as issued by Glos Arch + Eng.
- c) "*Bidder*" means the organization / *Contractor* submitting a *Bid* for **General Contractor Services** in response to this Request for Tender. *Bidder* is the term mainly used in the Instructions to *Bidders*, *Owners Documents and Conditions* and Price *Bid Form*.
- d) "*Board*" means the Greater Essex County District School *Board*. *Board* is the term mainly used in the Instructions to *Bidders*, *Owners Documents and Conditions* and Price *Bid Form*.
- e) "*Changes in the Work*" means additions, deletions, or other revisions to the *Work* approved in advance in writing by the *Consultant* or the *Board* and relate to the general scope of the Contract as determined by the *Board*.
- f) "*Closing Date*" means the deadline for Tender submissions, being the date indicated in this Request for Tender.
- g) "*Consultant*" means the person or entity engaged by the *Owner* and identified as such in the *Contract*. The *Consultant* is the Architect, the Engineer or entity licensed to practice in the province or territory of the *Place of Work*. The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative. The *Consultant* for this Tender is Glos Arch + Eng.
- h) "*Contract*" The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties. The *Contract* is the executed CCDC 2 – 2008, as amended by the CCDC Supplementary Conditions attached herein.
- i) "*Contract Documents*" The *Contract Documents* consist of the executed *Contract* and The General Conditions of the *Contract*, the *Bid Form*, the Instructions to *Bidders*, the *Owners Documents and Conditions*, the CCDC Supplementary Conditions, Supplementary General Conditions, Specifications, Drawings and such other documents as are listed in Article A-3 of the Agreement including all amendments thereto made pursuant to the provisions of the *Contract* or agreed upon between the parties.
- j) "*Contractor*" The *Contractor* is the person or entity identified as such in the *Contract*. The term *Contractor* means the *Contractor* or the *Contractor's* authorized representative as designated to the *Owner* in writing. The term *Contractor* is used mainly in the CCDC 2 2008 *Contract* and the CCDC Supplementary Conditions.

- k) "*Owner*" *The Owner* is the person or entity identified as such in the *Contract*. The term *Owner* means the *Owner* or the *Owner's* authorized agent or representative as designated to the *Contractor* in writing, but does not include the *Consultant*. The *Owner* is the term mainly used in the CCDC Supplementary Conditions and CCDC 2-2008 *Contract* to describe the Greater Essex County District School Board.
- l) "*Place of Work*" *The Place of Work* is the designated site or location of the Work identified in the *Contract Documents*.
- m) "*Products*" *Product or Products* mean material, machinery, equipment and fixtures forming the *Work*, but does not include Construction Equipment.
- n) "*Project*" means the total construction contemplated of which the Work may be the whole or a part.
- o) "*Subcontractor*" means a person or entity having a direct *Contract* with the *Contractor* to perform a part or parts of the *Work* at the *Place of Work*.
- p) "Substantial Performance of the Work" is as defined in the lien legislation applicable to the Place of the Work. If such legislation is not in force or does not contain such definition, *Substantial Performance of the Work* shall have been reached when the Work is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.
- q) "*Successful Bidder*" means the *Bidder* with the lowest compliant *Bid* who is awarded the *Contract* by the *Board* and accepts the *Contract* within the required timelines as indicated in the *Contract Documents*. The term *Successful Bidder* is used mainly in the Instructions to *Bidders*, *Owners Documents* and *Conditions* and *Price Bid Form*.
- r) "*Stipulated Price Bid*" means the pricing provided to the *Board* by a *Bidder* as part of their *Bid*.
- s) "*Total Performance of the Work/Completion of the Contract*" means when the entire *Work*, except those items arising from the provisions of GC 24 - WARRANTY, has been performed to the requirements of the *Contract Documents* and is so certified by the *Consultant* by issuance of a "Statement of Completion of the *Contract*".
- t) "*Work*" means the total construction and related services required by the *Contract Documents*.
- u) "*Working Day*" means a day other than Saturdays, Sundays and holidays which are observed by the construction industry in the area of the *Place of the Work*.

1.1 DESCRIPTION OF *PROJECT* AND TENDER NUMBER

- .1 The *Board* invites Pre-qualified Vendors of Record for **General Contractor Services** to *Bid* for the supply of all related labour, materials, equipment and services required for the completion of the **CVRIS UPGRADES AT MD BENNIE AND HARROW PUBLIC SCHOOLS** in accordance with the drawings and specifications prepared by Glos Arch + Eng.
- .2 The Tender Number for this *Project* is **2021-73T**.

1.2 TENDER FOR *STIPULATED PRICE BID* INSTRUCTIONS

- .1 Sealed Bids for "*Stipulated Price Bid*", for Tender Number 2021-73T, will be received by the Supervisor of Purchasing & Supply for Greater Essex County District School Board, **via e-mail at tenders@publicboard.ca, on May 6, 2021 on or before 2:00 p.m. local time; 2:01 p.m. will be considered late.** The official time will be the Board's e-mail server. E-mails will be opened and a bid summary sheet will be shared with Bidders, via e-mail. Tenders will not be publicly opened.
- .2 Prior to the submission of the *Stipulated Price Bids*, all *Bidders* shall carefully examine the *Bid Form*, the *Contract Documents* and fully inform themselves of the existing conditions and limitations of the *Work*.
- .3 If there exists doubt in the *Bidders* mind as to the intent of any information shown on the *Bid Form* or *Contract Documents*; **the *Bidder* must request clarification from the Consultant prior to submission of the *Bid*.**
- .4 Submitted *Stipulated Price Bid* shall cover the cost of all items contemplated by the *Contract* and no allowance shall be made subsequently in this regard on behalf of the *Bidder* for any error or negligence on the *Bidder's* part, unless otherwise expressly set out herein.
- .5 The *Bidder*, by submitting a *Stipulated Price Bid*, acknowledges and accepts the terms set out herein and in any other documents included in this Request for Tender.
- .6 *Bids* submitted must be completed in full and must be legible and written in ink or by mechanical device. The *Bid* must not be restricted by any conditions, or qualifications added to the *Bid* in the form of a covering letter or alterations to the *Bid Form* provided; any such conditions or qualifications will render the *Bid* non-compliant and ineligible for acceptance.
- .7 Adjustments by telephone to a *Bid* already submitted will not be considered. A *Bidder* desiring to make adjustments to a *Bid* must withdraw the *Bid* and/or supersede it with a later *Bid* prior to the specified closing deadline. This may be accomplished by a subsequent e-mail, with the following statement in the body of the email: "The attached *Bid Form* supersedes and replaces the previous *Bid* submission(s)."

- .8 Each instance of erasures, overwriting, strikeouts or whiteouts must be initialled by an authorized company representative of the bidding firm.
- .9 Any costs incurred in the preparation and submission of a *Bid Form* are solely the responsibility of the *Bidder*.
- .10 **No** Oral, Electronic, Facsimile or Telegraphic *Bids* will be accepted.
- .11 Failure to comply with the requirements of these Instructions to Bidders may cause a *Bid* to be declared invalid and such *Bid* may be rejected, in the sole and unfettered discretion of the *Board*.

1.3 GENERAL *BID* SUBMISSIONS

.1 *BID* SUBMISSION

- .1 Submit one original signed copy of the Bid Form, as a .pdf attached to the e-mail, as furnished by the Consultant, fully filled out in ink or typewritten with signature in longhand. Signatures shall be those of the authorized officers of the Bidder. Incorporated companies shall affix their corporate seal under the hands of their authorized officers. For further clarity, a hard copy is not required.
- .2 **Attach a .pdf copy of the completed *Bid Form*, to your e-mail and label the title of the e-mail, "TP100-2021-73T – *Stipulated Price Bid Tender Bus Bay Upgrades at Riverside Secondary School*. Please ensure your Company Name and Address are clearly marked in the body of the e-mail.**
- .3 **Bidders are strongly advised to submit their bids well in advance of the closing time, in consideration of the time it may take for emails with attachments to be received. Automatically system generated e-mails will be sent to confirm receipt, provided Bidders use "TP100" in the subject line of their e-mail, as instructed. Bidders must use tenders@publicboard.ca, do not use or cc any other e-mail address. It is the *Bidder's* responsibility to ensure their *Bid* is received by the *Board* on or before the *Closing Date* and time.**
- .4 **For further clarity, it is the responsibility of the Bidder to ensure emails are received and the Board takes no responsibility for blocked or not delivered emails. We will only be able to track emails that are received by our systems. Bidders should receive an automatically system generated e-mail within 30 minutes of e-mailing their bid, if not, the e-mail may have been blocked or not delivered.**

1.4 **BID SECURITY - BONDS**

- .1 The *Board* does not require a *bid* bond for this *Project*. Bidders shall understand that if they are the lowest compliant *bid* and they refuse to accept an award from the *Board*, this may result in a temporary or permanent removal of their firm from the pre-qualified vendor of record list.
- .2 As per Article GC 11.2 Sub-sections 11.2.1 and 11.2.2 of the General Conditions and 11.2.3 of the CCDC Supplementary Conditions and as hereinafter setout:
 - i) **AGREEMENT TO BOND**
 - a) Submit an Agreement to Bond from a licensed Canadian Surety Company authorized to do business in the Province of Ontario.
 - b) **Attach a .pdf copy of the signed and sealed Agreement to Bond** to your email and label the title of the e-mail “**TP100-2021-73T - AGREEMENT TO BOND FOR THE CVRIS UPGRADES TO MD BENNIE AND HARROW PUBLIC SCHOOLS**”. Please ensure your Company Name and Address are clearly marked **in the body of the e-mail**.
 - c) The Agreement to Bond e-mail is **not** to be submitted **with the Bid Form e-mail**. The Agreement to Bond shall be **submitted in a separate e-mail**.
 - d) The Board will open the Agreement to Bond **e-mail** first and if the contents meet the specifications, then the actual separate *Bid Form e-mail* will be opened.
 - e) The Agreement to Bond shall remain in force for the complete tender acceptance noted above.
 - ii) **PERFORMANCE BOND**
 - a) Furnish a Performance Bond as approved by the Canadian Construction Association from an insurer licensed under the *Insurance Act* to write surety and fidelity insurance and approved by the Board in the amount of **Fifty percent (50%)** of the *Contract Price*, according to the Terms and Conditions acceptable to the *Board* and the *Consultant*.
 - b) The *Bidder* shall include the cost of such Bond in the *Bid Submission*.
 - c) The *Successful Bidder* shall provide to the *Board* such Bond with the submission of the signed *Contract*.

iii) LABOUR AND MATERIAL PAYMENT BOND

- a) Furnish a Labour and Material Payment Bond from an insurer licensed under the *Insurance Act* to write surety and fidelity insurance and approved by the Board in the amount of **Fifty percent (50%)** of the *Contract Price*, stating that the *Board* will not be held responsible if payment to *Subcontractors*, as certified due by the *Consultant*, is not made by the Prime *Contractor* when due.
- b) The *Bidder* shall include the cost of such Bond in the *Bid Submission*.
- c) The *Successful Bidder* shall provide to the *Board* such Bond with the submission of the signed *Contract*.

1.5 INDEMINITY AND INSURANCE

- .1 As per the CCDC 2 2008 and CCDC Supplementary Conditions.

1.6 MANDATORY REQUIREMENTS

- .1 *Bids* will automatically be rejected under the following circumstances:
- i) *Bid* is late (by any amount of time).
 - ii) *Bid* security:
 - a) Agreement to bond is missing one of the following: corporate seal to bind the bonding company or signature of bonding company.
 - b) Security is in form other than specified.
 - iii) *Bid* is not signed.
 - iv) *Stipulated Price Bid* is illegible or not entered.

1.7 SALES TAX

- .1 The *Bid* & separate prices submitted for this *Contract* shall exclude Harmonized Sales Tax (HST).
- .2 For purposes of calculating costs of extra *Work* performed, any HST paid by the *Successful Bidder* to Suppliers or *Subcontractors* shall be deducted prior to any mark-up, profit or overhead by the *Successful Bidder*.
- .3 The *Successful Bidder* will not be permitted to add any mark-up for overhead or profit to the HST amount or to claim for any time involved in processing or collecting the HST and for its remittance to Canada Revenue Agency.

1.8 ACCEPTANCE OR REJECTION

- .1 *Bids* shall remain open to acceptance for a period of Ninety (90) calendar days commencing on and including the date set for receipt of *Bids*, and the *Board* may at any time within this period accept any of the *Bids* received.

- .2 The *Board* reserves the right to accept or reject any and all *Bids* and to accept any part of any one *Bid*. The *Board* may request further clarification of a *Bid* from the *Bidder*. While the *Board* is not obligated to consider *Bids*, which do not strictly comply with its requirements, it nevertheless reserves the right to do so, and specifically reserves the right to waive formalities and accept *Bids* that the *Board* deems to be substantially compliant.
- .3 Notwithstanding anything herein to the contrary, if any *Bid* contains technical errors or omissions which the *Board*, in its sole and unfettered discretion deems to be minor, the said *Bidder* may be asked by the *Board* to acknowledge and/or clarify those minor technical errors or omissions prior to the award of the *Contract*. For greater certainty, the *Board* may afford an opportunity to a *Bidder* to correct unintentional errors of form between the opening of *Bids* and the awarding of the *Contract*, and if it does so, the *Board* shall afford the same opportunity to all *Bidders*.
- .4 The *Board* and the *Consultant* shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any *Bidder* prior or subsequent to or by reason of the acceptance or the non-acceptance by the *Board* of any *Bid* or by reason of any delay in the acceptance of a *Bid*. *Bids* are subject to a formal *Contract* being prepared and executed.
- .5 The *Board* will award the *Contract* based on the total value of the total base *Bid* plus accepted separate prices.

1.9 TENDER DOCUMENT AVAILABILITY

1. *Bid* Documents may be obtained at:
 - a. Glos Associates Inc. – 325 Devonshire Road, Suite 410, Windsor, Ontario.
 - b. Windsor Construction Association
2. One set of *Bid* Documents may be obtained by the Prime Contract *Bidder*. Only one (1) set will be allowed per *Bidder*.
3. *Bid* Documents for *Subcontractors* are made available only for the purpose of obtaining offers for this *Project*. Their use does not confer a license or grant for other purposes. Printing costs are at the *Bidders'* and/or *Subcontractors* own expense.

1.10 QUERIES/ADDENDA

- .1 Upon receipt of *Bid* Documents verify that documents are complete; notify the *Consultant* should the documents be incomplete.
- .2 Should a *Bidder* find discrepancies in, or omissions from the Drawings, Specifications or other Documents, or should there be doubt as to their meaning, the *Bidder* shall notify the *Consultant* before Tender *Closing Date*.
- .3 Direct all inquiries in writing to the *Consultant* Glos Associates Inc. – Paul Driedger at E-mail: pauld@glosassociates.com by 3:00 pm on April 28, 2021.

- .4 The *Consultant*, in consultation with the *Board* will review all questions and issue written instructions in the form of an Addendum, which will become part of the *Contract Documents*.
- .5 The *Closing Date* of the Request for Tender may be extended as deemed appropriate by the *Board*. Include costs of any changes in the *Bid* and separate prices.
- .6 Replies to questions will be provided in the form of written addenda, a copy of which will be forwarded to all *Bidders*.
- .7 *Bidders* shall ask all required questions prior to submitting their *Bid*.

1.11 ALTERNATES - PRODUCT/SYSTEM OPTIONS

- .1 Where the *Bid Documents* stipulate a particular *Product* and/or service, the *Bid Sum* will be based upon the specified *Product/service*. *Bidders* must quote as specified.
- .2 If a *Bidder* has an alternate product and/or service that they wish to propose for the *Board's* consideration, *Bidders* must submit their suggested alternate(s) in writing to the *Consultant* by the deadline for Questions. If the *Board* approves any alternates, it will be noted on the addenda. Otherwise, *Bidders* shall quote only as specified.
- .3 *Bidders* who suggest alternates by written request to the *Consultant* on or before the deadline must include complete details about the alternates including specifications, modifications and revisions to other *Work* required for each alternative to enable the *Consultant* and the *Board* to determine the acceptability of such alternates.
- .4 If alternates are approved, they will be identified as approved by way of written addendum.
- .5 Only approved alternates may be quoted as part of the *Bidder's Stipulated Price Bid*.
- .6 The *Board* in its sole and unfettered discretion reserves the right to accept or reject alternates.

1.12 SITE VISIT

- .1 In order to prevent the spread of COVID-19, in lieu of a site visit, there will be a Microsoft Teams meeting held on Thursday, April 15, 2021 at 10:00 am. The meeting is expected to last one (1) hour. *Bidders* must R.S.V.P. to the *Consultant* at Glos Arch + Eng, 519-966-6750 extension 225 and pauld@glosassociates.com at least one business day prior to the Microsoft Teams meeting, to ensure they are included in the electronic meeting invitation.
- .2 In addition to the Microsoft Teams meeting, **Bidders are strongly encouraged to visit the site(s)** between April 16, 2021 and April 27, 2021. Please be advised that the site visit start times will be scheduled at least fifteen minutes after the final bell time(s) of each school. Interested *Bidders* must have an approved COVID Safety Plan prior to attending the sites, refer to clause 1.8 of the Owners Documents & Conditions for more information on this requirement. Please e-mail Vince Laframboise, Building Systems Officer at vince.laframboise@publicboard.ca to schedule a mutually agreeable site visit date and

time. Bidders are encouraged to schedule a visit to the sites early in the tender process, as requests made less than five business days prior to the deadline for questions may not be accommodated.

- .3 Site visit rules: Prime contractors may bring one sub-contractor, provided there is a maximum of two attendees and attendees are only allowed in the designated spaces as instructed by the Board's authorized representative. Alternately, sub-contractors may contact the Board's authorized representative on their own, to schedule their own site visit. In addition to the two attendees allowed, there will also be one Board representative to let contractors in. Questions, if any, must be made in writing to the Consultant, after the site visit. Contractors who visit the site(s) must wear a level 1 medical mask covering their nose, mouth and chin and a face shield or goggles at all times during the site visit. In addition, Bidders are required to physical distance at least two metres from others for the duration of the site visit. It is the responsibility of the Prime Contractor to contact the Board, as instructed, to schedule the site visit. All contractors will be required to sign-in the Contractor's Red Log Book in the main office and print their name and phone number for contact tracing purposes. Site visit rules are subject to change in accordance with federal, provincial and/or Windsor and Essex County Health Unit requirements to prevent the spread of COVID-19.
- .4 *All written questions to the consultant related to the site visit will be responded to formally by way of writing addendum to all bidders.*
- .5 Bidders shall visit the *Project* site and surrounding area before submitting a *Bid*.
- .6 *Bidders* shall ensure their *Bid* incorporates all existing site and building conditions, limitations and Municipal requirements under which the *Work* is to be performed.
- .7 By submitting a Tender, the *Bidder* agrees that they have carefully examined all *Contract* Drawings and Specifications and are familiar with all *Work* required and is satisfied as to the nature of:
 1. The Site;
 2. The *Work*, materials to be removed, materials to be supplied, means of access, condition, nature and position of existing buildings, sidewalks, obstructions, sewers, gas, water, telephone and electrical services, and every other condition which may affect tendering or execution of *Work*, both within site and adjoining areas, lanes and streets or any other matter which may enter into the carrying out of the *Contract* to a satisfactory conclusion.
 3. The provisions of the *Contract*.
 4. No extra payment will be allowed for additional *Work* arising from conditions which could have been determined, had a proper examination been made or where the *Bidder* claims to be uninformed as to any provisions or conditions intended to be covered by the *Contract*.

1.13 FAIR WAGES AND HOURS

- .1 All persons in the employment of the *Successful Bidder* or any *Subcontractor*, or other person doing or contracting to do the whole or any part of the *Work* contemplated by the *Contract*, should be paid in accordance with the **"Fair Wage Schedule" as established by The Employment Standards Branch of the Ministry of Labour** and any regulations under such Act that relates to wages, hours of work or other labour conditions, unless otherwise noted.

1.14 PROJECT SCHEDULE

- .1 Outline of *Project* Schedule

Key Events	Milestones	Date
1	Request for Tenders Available to <i>Bidders</i>	April 12, 2021
2	Pre-bid Teams Meeting	April 15, 2021
3	Pre-scheduled on-site visits (optional)	April 16 to April 27, 2021
3	Date of Last Questions to <i>Consultant</i>	April 28, 2021
4	Addendum Issued (if required)	April 29, 2021
5	<i>Bids Due</i>	May 6, 2021
6	<i>Date of P.O. issuance/execution of CCDC2-2008 Contract</i>	May 7, 2021
7	<i>Contractor</i> Project Kick-Off Meeting	May 10, 2021
8	Date of Site availability (afternoons)	May 11, 2021
9	Date of Site availability (days)	July 2, 2021
10	Substantial Performance of the Work	November 30, 2021
11	Deficiency List Walk Through	December 1, 2021
12	Total Performance of the Work	December 31, 2021
13	Full Completion of the Project	May 30, 2022

1.15 TIME OF COMPLETION

- .1 *Successful Bidder* shall meet the *Board's* substantial completion date as stated in the *Price Bid Form*. In addition, full completion of the project must occur no later than six months from the date of Substantial Performance of the Work. Full completion of the Project includes but is not limited to final payment, deficiencies, O & M Manuals, As-Builts and permits.

1.16 CONSTRUCTION DRAWINGS

- .1 The *Board* will provide the *Successful Bidder* up to six (6) sets of drawings for construction and as-built purposes. If the *Contractor* requires additional sets, the *Contractor* shall obtain the prints at their own expense.

1.17 EXECUTION OF A CONTRACT AND BOARD'S PURCHASE ORDER

- .1 The *Successful Bidder* shall execute a CCDC-2 2008 Stipulated Price Contract in writing with the *Board* within ten (10) days after being notified in writing by the *Board* of the acceptance of the *Bid*.
In the event that the *Successful Bidder* fails to execute a *Contract* within the said period, the Board in its sole and unfettered discretion may rescind the selection of that *Bidder*, and make an offer to next lowest compliant *Bidder* or reject all Tenders. Bidders are reminded that if they are the lowest compliant bid and they refuse to accept an award from the Board, this may result in a temporary or permanent removal of their firm from the pre-qualified vendor of record list.
- .2 A purchase order accepting a *Bid* will be issued by the *Board* to the *Successful Bidder* following the execution of the *Contract*.

***** END OF SECTION *****

Submit Stipulated Price *Bid* and price breakdowns where applicable, on this official form.

All blank items indicated must be filled out and delivered on or before the official *Bid* closing time as stated in the Instructions to *Bidders*.

FROM: LEGAL NAME OF BIDDER: _____

BUSINESS ADDRESS FOR THE CONTRACT: _____

TO: Supervisor of Purchasing and Supply
Greater Essex County District School Board
Via e-mail to tenders@publicboard.ca

Bidders must use the above e-mail address only. Do not e-mail to any other e-mail address.

RE: CVRIS Upgrades to MD Bennie and Harrow Public Schools

1.0 BASIS OF TENDER

.1 DOCUMENTS

- .1 We have examined all the official Contract Documents issued by the Consultant, including Specifications and or drawings as applicable.

.2 SITE CONDITIONS

- .1 We have inspected and visited the site of the proposed Work and fully familiarized ourselves of the existing conditions and limitations of the Work.

.3 UNDERSTANDING

- .1 **NO ORAL, FAX, ELECTRONIC, TELEPHONE OR TELEGRAPHIC PROPOSALS WILL BE CONSIDERED.**
- .2 The requirements of these Official Request for Tender documents govern all phases of the Work and the tender proposal stipulated sum shall include all costs that arise from compliance with such documents. It must be clearly understood that the *Board* cannot accept any price variation in the supply or installation of products or labour or materials from those submitted and carried by the *Bidder* hereunder. During the *Contract* period, the *Board* will not be responsible for, or entertain any price increase in the cost of materials or labour carried in the *Bid* amount for any reason, including acts of war or world events.
- .3 *Bidders* are responsible for acquainting all *Subcontractors* or supply *Bidders* with the requirements of the Instructions to Bidders Price Bid Form and the Owner's Documents and Conditions.
- .4 **No allowance will be made after award of *Contract* for errors or omissions due to *Subcontractors* or suppliers not being familiar with such requirements.**

- .5 The award of this *Contract* is subject to budget allotment and availability, and Trustee approval for the *Board*.

2.0 COST PROPOSAL

.1 BASE *BID* SUM (*Which includes all allowances*)

- .1 We, the undersigned, hereby offer to furnish all materials, installation, labour and equipment necessary to complete the entire work (project) in strict accordance with all the requirements of the official *Contract Documents*,

For the Stipulated Price *Bid* of \$ _____

.2 Harmonized Sales Tax (HST)

- .1 The Stipulated Price *Bid* and price breakdowns where applicable submitted for this contract shall exclude the HST.
- .2 For purposes of calculating costs of extra work performed, any HST paid by the *Contractor* to Suppliers or *Subcontractors* shall be deducted prior to any mark-up, profit or overhead by the *Contractor*.
- .3 The *Contractor* will not be permitted to add any mark-up for overhead or profit to the HST amount or to claim for any time involved in processing or collecting the HST and for its remittance to Canada Revenue Agency.
- .3 We confirm that the Stipulated Price *Bid* indicated in Subsection 2.0.1.1, Base *Bid* Sum includes all allowances, the cost of all labour, materials, equipment, freight, mileage, fuel surcharges, travel time, all other applicable taxes (if any), royalties, custom duties, foreign exchange rates, overhead and profit, insurance premiums, bonds, mobilization, supervision, and all other charges at the date of this tender, and not subject to revisions due to changes in cost of labour, materials or other items. No allowance shall be made subsequently in this connection on behalf of the *Contractor* for any error or negligence on their part.

.2 SUB-CONTRACTS

- .1 Listed hereunder are the names of *Subcontractors* whose *Bids* have been used in this tender and to whom we intend to award sub-contracts if we are awarded the *Contract*. It is acknowledged that no changes to the list will be made without the advanced written approval of the *Board's* Representative.

Trade

Name of Subcontractor

Masonry Repairs

Miscellaneous Steel Framing

Roofing

Aluminum Doors & Frames

Gypsum Board & Framing	_____
Acoustic Tile Ceilings	_____
Flooring	_____
Painting	_____
Washroom Accessories	_____
Plumbing	_____
HVAC Work	_____
Electrical	_____
Fire Alarm	_____

.2 SEPARATE PRICES

- .1 The following are our separate prices for the Work listed hereunder. In the case of an add, we confirm that all work identified in the Separate Price is **NOT INCLUDED** in our Base Bid. In the case of a deduct, we confirm that all work identified in the Separate Price **IS INCLUDED** in the Base Bid. These separate prices do not include HST:

<u>ITEM</u>	<u>ADD</u>	<u>DEDUCT</u>
1. All materials, installation, labour, and equipment related to the work detailed for the Library at MD Bennie Public School.	\$ _____	\$ _____
2. All materials, installation, labour, and equipment for the new roof top equipment as noted for MD Bennie Public School.	\$ _____	\$ _____

.3 INDIVIDUAL PRICES PER SCHOOL

- .1 The following are our Individual Prices per School listed hereunder. The Individual Prices listed apply to the breakdown of the total **Stipulated Price Bid inclusive of all Allowances (allowances shall be in accordance with Section 01 21 00)**. These prices **do not include H.S.T. These prices are being requested for budgetary purposes.**

1. MD Bennie Public School	\$ _____
2. Harrow Public School	\$ _____

3.0 ADDENDA

- .1 We acknowledge the receipt of the following addenda issued during the Request for Tender period.

ADDENDUM NO. _____ ADDENDUM NO. _____

ADDENDUM NO. _____ ADDENDUM NO. _____

4.0 COMPLETION OF THE WORK

- .1 It is the intention of the Owner to award the *Contract* on May 7, 2021. Work is to commence on May 11, 2021 and be completed no later than November 30, 2021.
- .2 DATED AT _____, THIS _____ DAY OF _____, 2021.
(City) (Day) (Month)
- .3 The undersigned Bidder, understands the circumstances and requirements applicable to this *Contract* as specified in these official Request for Tender documents and will complete the entire Work (project) on or before the completion deadline date as specified in **Subsection 4.1, Completion of the Work**.

LEGAL NAME OF FIRM

Phone

: _____

Fax

: _____
ADDRESS OF FIRM

E-Mail

AUTHORIZED SIGNATURE OF PROPONENT

PRINT NAME & TITLE

I have the authority to bind the corporation.

***** PRICE BID FORM – END *****

1.1 GENERAL REQUIREMENTS

- .1 The Prime Contractor for this project is a General Contractor.
- .2 This is a Category **B** General Contractor Project.

1.2 PRE-QUALIFIED GENERAL CONTRACTORS ARE AS FOLLOWS:

CATEGORY B ≥ \$500,000 & < \$2 million				
COMPANY NAME	CONTACT	PHONE	FAX	E-MAIL
Adine Builders Limited	Greg Chiarcos	519-966-1823		greg@adine.ca
Agri-Urban Buildings Incorporated	Mark Timmermans	519-683-4415	519-683-4654	info@aubidesignbuild.com
Alliance General Contracting of Windsor Inc.	Chris Weller	519-251-1111	519-251-8888	alliance5@bellnet.ca
Aveiro Constructors Limited	Victor Aveiro	519-268-8231	519-268-7354	estimating@aveiroconstructors.com
Everstrong Construction Ltd.	George Simeonoff	905-878-7295	905-878-7298	george@everstrong.ca
Fortis Construction Group Inc. and Affiliates	Max De Angelis	519-419-7828	519-419-7830	christian@fortisgroup.ca
Front Construction Industries Inc.	Paul Merritt	519-250-8229	519-250-8507	pmerritt@frontconstruction.com
Intrepid General Limited	Anthony Mandarino	519-727-5811	519-727-3242	anthony.mandarino@intrepidgeneral.ca
M.J. Dixon Construction Limited	Paul Chiang	905-270-7770	905-270-4244	estimating@mjdixon.ca
Niacon Limited	Jose Correa	905-262-5492	905-262-5794	jose@niacon.ca
Oscar Construction Company Limited	A. M. Razak	519-737-0350	519-737-0355	oscarcst@mnsi.net
Pupatello & Sons Ltd.	Anthony Pupatello	519-944-7878	519-944-7879	pupatello@bellnet.ca
Rosati Construction Inc.	Tony Rosati	519-734-6511	519-734-7872	salesassistant@rosatigroup.com
Sterling Ridge General Contracting Inc.	J. Randall Koop	519-734-9000	519-734-9020	srgc_estimating@sterlingridgegroup.com
TCI Titan Contracting Inc.	Art Ussoletti	519-977-1125	519-977-0352	art@tciwindsor.com
Trillium Contracting Inc.	Chris Mannina	519-972-0862	519-972-6248	chris@trilliumcontractinginc.com
W.D. Lester Construction Services Inc.	Bill Lester	519-977-1160	519-977-0436	mail@lesterconstruction.ca
Westhoek Construction Limited	David Thorpe	519-351-4221	519-351-7750	dave@westhoek.on.ca
Wincon Construction 1986 Limited	Michael Schincariol	519-737-1435	519-737-1955	office@winconconstruction.com

1.3 PRE-QUALIFIED ELECTRICAL CONTRACTORS ARE AS FOLLOWS:

Category A ≥\$10,000 & <\$4 million				
COMPANY NAME	CONTACT	PHONE	FAX	E-MAIL
Honey Electric Limited	Matt Hoekstra	519-351-0484	519-351-8710	corporate@honeyelectric.com
Mid South Contractors ULC	John Salvatore	519-966-6163	519-966-1019	jsalvatore@mceco.com
Poirier Electric	Justin Poirier	519-945-1000	519-974-7438	jpoirier@poirierelectric.com
PowerServe Inc.	Clinton Attard	519-945-3558	519-737-0296	clinta@nemail.ca
Rorison Electric Limited	Mike Hope	519-969-5270	519-969-5000	mike@rorison.com
Tucker Electric Ltd.	Whitman Tucker	519-737-0216	519-737-0217	tuckerelectric@bellnet.ca
Turn Key Group Ltd.	Luc Pignal	519-969-6336	519-969-7516	luc@tkglt.com
Vollmer Inc.	Brad Vollmer	519-966-6100	519-966-0934	vollmer@vollmer.ca

1.4 PRE-QUALIFIED MECHANICAL CONTRACTORS ARE AS FOLLOWS:

Category A ≥\$10,000 & <\$4 million				
COMPANY NAME	CONTACT	PHONE	FAX	E-MAIL
Anvi Services Ltd.	Amit Bamba	905-997-3895	905-997-3896	office@anviservices.com
CEC Mechanical Ltd.	Ben Hanlon	905-713-3711	n/a	bhanlon@beswickgroup.com
Eagle Mechanical Group Inc.	Osvaldo Rizzo	519-737-7778	519-737-1124	office@eaglehc.net
Haller Mechanical Contractors Inc.	Virg Costa	519-254-4635	519-254-3385	vcosta@hallergroup.ca
Keith's Plumbing & Heating Inc.	Morgan Pickles	905-544-8118	905-544-6815	info@keithsph.com
Lekter Industrial Services Inc.	David Holec	519-727-3713	519-727-6176	dholec@lekter.net
St. Clair Mechanical Inc.	John Dawson	519-864-0927	519-864-0801	dawson@stclairmechanical.ca
Swift Mechanical Services Inc.	Farooq Malik	905-265-8777	416-352-6119	estimate@swiftmech.com
Vollmer Inc.	Brad Vollmer	519-966-6100	519-966-0934	vollmer@vollmer.ca

1.5 PRE-QUALIFIED ROOFING CONTRACTORS ARE AS FOLLOWS:

COMPANY NAME	CONTACT	PHONE	FAX	E-MAIL
Accent Roofing & Siding	Wayne Laliberte	519-974-9942	519-419-1299	accent.roofing@yahoo.ca
Atlas-Apex Roofing Inc.	Brett Beetles	416-421-6244	416-421-1661	bbeetles@atlas-apex.com
Gillett Roofing Inc.	Wayne Gillett	519-326-6301	519-326-7561	gillett@mnsi.net
H & N Roofing & Sheet Metal Limited	Manuel Goncalves	519-453-1720	519-453-8817	hnroofing@hnroofing.com
Kingsville Roofing (2011)	John Spevak	519-839-5130	519-839-5334	kingsvilleroofing@gosfieldtel.com
LaFleche Roofing (1992) Limited	Chris LaFleche	519-681-7610	519-668-7853	chris@laflecheroofing.com
Pollard Enterprises Ltd.	Jamie Pedra	905-332-6660	905-332-6662	jamiepedra@pollardroofing.ca
Rauth Roofing Limited	Richard Rauth	519-945-6301	519-945-6311	office@rauthroofing.com
Semple Gooder Roofing Corporation	Mike Witt	416-743-5370	416-743-4257	mwitt@semplegooder.com
Smith-Peat Roofing and Sheet Metal Ltd.	Robert Watson	519-235-2802	519-235-1532	speat@hay.net
Thomas Roofing London Ltd.	Peter Thomas	519-457-2650	519-457-3156	peter@thomasroofing.ca

1.6 OWNER CONDITIONS TO BE REFERRED TO IN CONJUNCTION WITH INSTRUCTIONS TO BIDDERS SECTION 1.2

- .1 *Bidders* who do not respond after 2 successive invitations to *Bid* will be removed from the Owner's approved Bidder's list for this category of goods or services.

In addition and provided there is supporting evidence, GECDSD may exclude a *Bidder* from participating in a *Bid* on grounds such as:

- bankruptcy or insolvency;
 - false declarations;
 - significant or persistent deficiencies in performance of any substantive requirement or obligation under a prior contract or contracts;
 - final judgments in respect of serious crimes or other serious offences;
 - professional misconduct or acts or omissions that adversely reflect on the commercial integrity of the *Bidder*; or
 - failure to pay taxes.
- .2 Where feasible and applicable, all new equipment will have an appropriate energy efficiency rating and all service providers shall ensure energy and water savings measures are undertaken.
 - .3 Please note that vendors are required to comply with all applicable laws, including CASL, in providing goods or services to the GECDSD. This also extends to communications sent on the Board's behalf. By responding to this Tender, Bidders agrees to accept commercial electronic messages from the GECDSD, including

receiving future bid documents. Should Bidders no longer wish to receive future bid documents, they shall notify the Board at once. Bidders will be required to indemnify the GECDSB for any failure by Bidders to comply with CASL, to the extent that Bidders' action, or inaction, could expose the GECDSB to liability.

1.7 SITE VISIT PROTOCOL TO BE REFERRED TO IN CONJUNCTION WITH INSTRUCTIONS TO BIDDERS SECTION 1.12

.1 Approved COVID safety plan required in advance of attendance on Board property

All Prime and Subcontractors must have written approval to enter Board property based on their vetted COVID safety plan. Those contractors who have not yet submitted a COVID safety plan to the Board, must submit a comprehensive plan that includes the requirements below by no later (3) three business days from the Tender issuance date to Dawn Lamontagne, Supervisor of Purchasing and Supply via e-mail to dawn.lamontagne@publicboard.ca. The Board will then review the plan and advise of any required changes, prior to giving approval to Contractors to attend the site(s). The onus is on the Contractor to submit the COVID Safety Plan and make prompt changes, if required. Below are the items that Contractors must to address in their detailed COVID safety plan. Please note that this list is subject to change if the MOE or the WECHU has more requirements.

- a) Providing hand sanitizer with at least 70% alcohol content in vehicle for their staff.
- b) Using hand sanitizer before accessing site.
- c) Physical distancing of at least 2 m/6 ft.
- d) Medical grade Level 1 mask must be worn at all times, as noted below covering the nose, mouth and chin.
 - a. These masks must be worn while working or present inside any Board site;
 - b. They must also be worn inside shared vehicles at all times;
 - c. These masks should also be worn while working or present outside any of our sites (if physical distancing cannot be maintained).
 - d. Face shields or goggles must also be worn in addition to wearing masks while working or present inside any Board site.
- e) Daily self-assessment (use Ontario Government's <https://covid-19.ontario.ca/self-assessment/>).
- f) Procedure if sick:
 - a. If feeling sick before work, do not come to work and contact your Supervisor
 - b. If feeling ill during the day, separate from others, contact your Supervisor and drive home.
 - c. Supervisor to contact the Windsor Essex County Health Unit when employee has any suspected COVID-19 symptoms and follow their direction.
 - d. If your staff becomes ill or is identified as COVID-19 positive, you must immediately advise the GECDSB of the Board Site(s) and locations within the GECDSB' building that they were present in / worked at.
- g) Keep employee daily site tracking records.
- h) Sign in/out of the GECDSB Red Book, School Visitor Log and Daycare Visitor Log (if going there). Please also print name and phone number for contact tracing.
- i) Hygiene etiquette:
 - a. Washing hand for 20 seconds as often as possible with soap and warm water or use hand sanitizer;
 - b. Avoid touching eyes, nose, mouth;
 - c. Avoid contact with people who are sick;
 - d. If you use a tissue, discard immediately and wash your hands.
- j) Clean/disinfect common touch surfaces in vehicles daily, such as door handles, the steering wheel, turning indicator, buttons, gear switch, etc.
- k) Clean/disinfect tools and equipment before and after use and avoid sharing tools.
- l) Launder clothing daily after work.
- m) Avoid handling paperwork and use alternatives, if possible.

- n) Payments are cashless whenever possible.

.2 Questions

In order to prevent the spread of COVID-19, Contractors and Subcontractors shall avoid asking questions during the site visit. If any errors or omissions are evident in relation to the tender package or you have anything that you need clarified, written questions shall be sent to the Consultant prior to the deadline for questions.

The Consultant, in consultation with the Board will review all questions and issue written responses in the form of Addenda, which will become part of the Contract Documents.

.3 Re-visiting a site after this site meeting – prior to tender submission

In order to prevent the spread of COVID-19, we are not permitting additional site visits. Contractors must ensure they view and take pictures during their scheduled site visit only.

1.8 TERMINATION

- .1 As per CCDC 2 2008 and CCDC Supplementary Conditions.

1.9 DISPUTE RESOLUTION

- .1 As per CCDC 2 2008 and CCDC Supplementary Conditions.

1.10 SAFE SCHOOLS PROCEDURES

- .1 Motorized Vehicles on School Property: While on the property of the Board, the driver of the vehicle and their assistant(s) must comply with the following:
- .1 Prior to entering onto the property of the Board, the vehicle, driver and any assistant(s) must have valid insurance coverage for any accidents that may occur on GECDSB property;
 - .2 **Drivers must NOT enter, leave or operate their vehicles while children are present on school grounds.**
 - .3 Bidders' Representatives, Carriers and Sub-Contractors shall recognize that it is strictly prohibited for motorized vehicles to enter School playgrounds without authorization from School authorities.
 - .4 Adequate surveillance/guidance must be maintained at all times. If playground area or access road is occupied by students, vehicle access is prohibited until area is clear.
 - .5 Motorized vehicles shall be operated with due caution at all times while on School property. Speed limit must not exceed eight (8) kilometers {five (5) miles} per hour at any time.
 - .6 All vehicles must be equipped with operational back-up warning signals.
 - .7 Drivers of motor vehicles shall not operate their vehicles beyond the parking area.
 - .8 No vehicle shall be backed up unless there is a person on foot to guide the driver;
 - .9 No vehicle shall be left running while parked on the property of the Board;
 - .10 When returning to an unattended vehicle, the driver must circle the vehicle to ensure that no child is hiding behind or under the vehicle before it is driven;
 - .11 All vehicle accidents, which occur on school property, must be immediately reported to the School Principal or designate.
- .2 Under no circumstances are school doors to be propped open. If a door needs to be held open, it must be monitored by an employee of the Successful Bidder.
- .3 The Successful Bidder is responsible for ensuring their employees and/or delivery drivers report to the site

office or to the main office of every school during regular school hours and notify the school office staff of the purpose of the visit. Successful Proponent employees and/or delivery drivers are required to adhere to all school specific procedures, as applicable.

- .4 It is the responsibility of the Successful Bidder to ensure their employees sign in and sign out at the Main Office of the Schools. Use the “Red Facility Services Log Book” which exists in all elementary and secondary office areas, while performing their duties.
- .5 The following information must be recorded in a legible manner:
 - .1 Date
 - .2 Company Name
 - .3 Employee Name
 - .4 Employee Signature
 - .5 Work Order Number (if applicable)
 - .6 Reason for Visit
 - .7 Time Entering Building
 - .8 Time Leaving Building

1.11 HEALTH AND SAFETY

- .1 **General** - The Occupational Health and Safety Act describes the responsibilities of employers, supervisors, workers, contractors, owners and operators. The Board requires suppliers maintain procedures, training, and enforcement so that the responsibilities of all parties are carried out accordingly in the workplace. The Successful Bidder shall abide by and strictly adhere to the requirements as promulgated under the Occupational Health and Safety Act and all of its applicable regulations and assume full responsibility for contraventions of same. They also must adhere to all the Board’s Health & Safety Policies and Management Programs as may be deemed applicable.
- .2 The Successful Bidder shall comply with all applicable health and safety legislation, and all other laws, regulations, bylaws, codes and policies of any competent government authority relating to their operation and their Employees. The Successful Bidder shall provide written proof of such compliance upon request by the Board and the Board reserves the right to inspect the premises at any time.
- .3 The Successful Bidder must submit any and all applicable Health & Safety related Policies, Procedures, Management Programs, Safety Data Sheets, Training Records, Inspection Records, Logs, Documentation, Meeting Minutes, Correspondence, Etc., upon request from the Board.
- .4 The Successful Bidder must report any and all concerns regarding potential Health & Safety hazards, issues, damages, etc. immediately to the Board representative.
- .5 The Successful Bidder will ensure that their workers are trained in the Contractor’s programs prior to commencing work. The Board has a Contractor Safety Program which can be made available for review and training purposes as may be applicable.
- .6 Successful Bidder employees must be clearly identifiable by wearing Board approved company logoed uniform t-shirts at all times when working on Board property.
- .7 **Policies & Programs** - Bidders will submit proof of their current and maintained Health and Safety Policy, Workplace Violence Policy and Workplace Harassment Policy upon request by the Board.
- .8 Bidders will submit proof of their current and maintained Health & Safety Management Program, Workplace

Violence Management Program and Workplace Harassment Management Program upon request by the Board.

- .9 **WHMIS Management Program** - The Successful Bidder must have a WHMIS 2015 Compliant Management Program submit, which includes Safety Data Sheets (SDS) for each and every chemical product that they intend to utilize during their work. In addition, the Successful Bidder must have WHMIS 2015 Compliant SDS available at the job-site for any chemical product. This is expanded to include any product which is known to create, or suspected of creating, a health hazard or discomfort when the work is being performed or upon commissioning of the project including, but not limited to, the following:
- .1 adhesives;
 - .2 solvents and cleaning products;
 - .3 sealants, (caulking, vapour seals, etc.);
 - .4 paint, varnish or other coatings;
 - .5 other products whose particles or vapours may become air borne after installation.

Additional Information on the Board's chemical inventory can be referenced under the WHMIS Management Program located in the main office of every school building (red binder).

- .10 **Designated Substances Management Program** - The Successful Bidder should have a Designated Substances Management Program (as may be applicable), and at a minimum, have a basic knowledge of Designated Substances (Asbestos, Lead, Mercury, Silica). Additional Information on the Board's Designated Substances Management Program and its site based Management Plan (specific contents to each site) is located in the main office of every school building (blue binder).

The Successful Bidder is responsible for all asbestos removal on the project by a qualified contractor and all associated costs. The Contractor must consult with and notify the Board prior to any asbestos removal as the Board is obligated to notify the site Joint Health and Safety Committee and to maintain its inventory. The Contractor shall submit, at the end of the project, documentation indicating what asbestos was removed, quantity and location of removal. Workers are to be provided instructions by the Successful Bidder regarding the management of any known or suspected asbestos that they are working in and around or discover (stop work immediately and notify the Board representative). The Board representative is to be notified of all unforeseen discoveries of asbestos.

The Board confirms that all painted surfaces in any Board owned facility constructed prior to 1990 contain lead. It is the responsibility of the Successful Bidder to comply with the Ministry of Labour's Guidelines entitled "Lead in Construction Projects" when disturbing any surface containing lead. All associated costs are the responsibility of the Successful Bidder.

- .11 **Lockout - Tag Out** - The Successful Bidder must ensure appropriate lockout - tag out procedures are followed during the work. All equipment that is locked out by the Contractor must be tagged with the employee name and date as a minimum. This applies to all sub-contractors as well. The Successful Bidder to submit a copy of any sub-contractor Lockout – Tag Out procedures to the Board.
- .12 **Hot Work Procedure** - The Successful Bidder and all sub-contractors must have a Hot Work Procedure and this must be submitted to the Board prior to the start of construction. The Board requires a fire watch to be conducted by the Contractor 1 hour after completion of hot work activities. The fire watch must be witnessed by Paladin Security and documented by the Successful Bidder. All costs are the responsibility of the Successful Bidder.

Welding shields shall be used when any welding is occurring in the areas where staff, students or the general public may view the welding flash. This applies to both internal and external locations. Care must be taken

during welding to ensure existing building finishes are not damaged.

Torching is prohibited for any kind of roof repair or replacement including overlay cap work. This prohibition applies to the melting of snow or ice that is covering existing roof membranes. Roofers who practice torching on any school site will be asked to leave the premises.

- .13 **Working at Heights** – The Successful Bidder and all sub-contractors must have a working at heights procedure and this must be submitted to the Board prior to the start of construction. The Board requires all such persons whom work at heights, including on roofs to be trained in working at heights by the Ministry of Labour approved training / certification and to utilize / maintain certified and inspected lifting devices, fall arrest personal protective equipment.

- .14 **Indoor Air Quality / Environmental Sensitivities** - The Successful Bidder must ensure all painting activities occur outside of the regular school year (i.e. July and August, March Break or Christmas Break). The successful Bidder may request painting to be done during the school year however, the Board reserves the right to deny that request if it creates an issue with occupants in the building due to environmental sensitivities. If painting is approved to be completed during the school year, the painting will only be completed at the beginning of a weekend and end by midnight Saturday night to allow for one day aeration of the building prior to the start of school on Monday. The contractor is responsible for ensuring all ventilation systems are running for that time period.

All school occupants and property will be protected by the Contractor from the generation of dust and dirt. The Contractor will ensure best efforts to keep all construction areas free of dust and debris and that dust and dirt does not migrate outside of the construction area. Special consideration will be given to any activities involving dry cutting to ensure that all precautionary measure are implemented prior to conducting dry cutting to ensure no migration of dust or dirt. Any additional cleaning required inside and outside of the construction area due to dust or dirt creation will be the sole responsibility of the Contractor. The Contractor will be responsible to ensure that, at the end of Total Completion, the project area is turned over to the Operations Department free of dust and dirt.

- .15 **Noise** - The Successful Bidder will work with the Principal of the school to ensure any noisy activities and activities that cause excessive vibrations are planned properly to minimize any disruption to classroom activities.

- .16 **Reps & Committees** – The Successful Bidder will submit proof of having either a Health & Safety Representative (if under 19 workers) or an Occupational Joint Health & Safety Committee (if greater than 20 workers) as prescribed under the Occupational Health & Safety Act upon the request by the Board.

- .17 **Accidents & Injuries** - All Contractor / subcontractor workplace injuries or accidents on Board property must be reported to the Successful Bidder and to Board Representative within 24 hours.

Any Contractor / subcontractor workplace injury that is defined under the Occupational Health and Safety Act as a “Critical Injury” shall be reported to the Successful Bidder IMMEDIATELY. The successful Bidder shall inform the Board representative IMMEDIATELY thereafter.

- .18 **Postings & Signage** - The Successful Bidder will provide and affix appropriate postings and signage identifying the work area as a construction zone as required by the Ministry of Labour. This includes all postings as prescribed such as Notice of Project, Form 1000s, construction / hazard signs, etc. The construction zone hoarding and signage shall be erected in consultation with the Board representative and the Principal.

- .19 **Access / Egress / Security** - All efforts must be made to maintain all building exits. Should a school exit need

to be disabled for a period of time, the Successful Bidder will be responsible for working with the Principal to alter the school's fire plan and obtain the approval of the local fire inspector prior to disabling the school exit.

The Board will supply the Contractor with appropriate building keys and security access code for the building. The Successful Bidder will sign for the keys and return the keys at the end of the project. If the successful Bidder is working outside of stated custodial hours, the Contractor will be responsible to ensure the entire building is secure and the security system is armed at the end of each work day. If this process is not followed and the building is left unsecured, any damages incurred will be the responsibility of the Contractor.

The use of school property will NOT be permitted including, phones, faxes, custodial equipment or supplies, televisions, computers or electronic devices. The Contractor will provide all temporary facilities as per the general requirements at each site. The Contractor will be responsible for the replacement of any missing or damaged school property.

- .20 **Utility Interruptions** – The Successful Bidder will coordinated with the Board representative and the school Principal. A continuous fire monitoring/watch will be implemented by the Successful Bidder for the duration of the outage at their cost.
- .21 **Confined Spaces / Service Ways** - The successful Bidder and all sub-contractors must have a confined space / service ways safe work procedure and this must be submitted to the Board prior to the start of construction. The Board requires all such persons whom work in confined spaces / service ways to be trained and have a compliant program, which includes all items as prescribed.

1.14 WORKPLACE SAFETY & INSURANCE BOARD “WSIB”

- .1 The *Successful Bidder* must provide a copy of their Workplace Safety and Insurance Board Clearance Certificate of good standing, "Section 748" of the Workplace Safety and Insurance Act to the *Board* prior to commencing *Work* and in any event within ten (10) *Working Days* of acceptance of the *Bid* by the *Board*. Further the *Successful Bidder* shall maintain their Workplace Safety and Insurance Board Clearance Certificate of good standing at all times during the life of the agreement. The Board reserves the right to request a copy at any time.

1.15 EXISTING BUILDING SERVICES

- .1 The *Successful Bidder* shall assess the existing building services and determine that they are in proper working order prior to construction. Existing building services shall include but not be limited to, fire alarm system, security system, PA System, Telephone and Data systems. If the *Successful Bidder* has any concerns they must be reported in writing to the *Consultant* and the *Board* prior to commencement of *Work*.
- .2 On or before the completion of the *Project*, if the existing building services are not operating as they were prior to the *Successful Bidder* commencing *Work*, the *Successful Bidder* shall repair the existing services to the satisfaction of the *Board*. Upon the *Successful Bidder* being aware that an existing building service is not operation, they shall immediately notify the *Board* and take the necessary actions to repair the system.

1.16 GECDSB NETWORK REQUIREMENTS

- .1 In an effort to enhance *Board* network security and align better with accepted industry standards, additional steps are being implemented for *Contractors* requiring access to network devices, cabinet access or when connecting to the *Board* network.

- .2 Only *Board* Information Technology (IT) staff will be permitted access to the network closets, therefore it is imperative that when *Contractors* require network and cabinet access to install or resolve an issue they must contact the *Board's* Network team (IT staff) prior to going on site (occasional exceptions may be approved in emergency situations).
- .3 During the request (via email or phone call or IT work order) the *Contractor* must stipulate:
 - Applicable eBase ticket number, (if known or if a new request one will be assigned).
 - The school and closet they require access.
 - The date and time they expect to be on-site
 - And a brief description of the task prompting the request.
- .4 The *Board* Network team from the IT department will:
 - Log the call into the eBase system updating the ticket (provided above or create a new ticket) with the request details.
 - Approve the required access or elevate the request as required.
 - Schedule an IT staff member to be on-site during the time frame identified above.
- .5 This process will allow the *Board* to have a written record of any access.
- .6 The names and contact information of the *Board's* Network team (IT staff) as well as updated procedures, if any, will be provided to the *Successful Bidder*.

1.17 NO SMOKING, NO VAPING POLICY AND NO SUBSTANCE ABUSE

- .1 All *Bidders* are advised that there is no smoking or vaping permitted within the school or on *Board* property, and this must be strictly adhered to by all parties. The *Successful Bidder* shall be responsible for advising their employees or any other person doing or contracting to do the whole or any part of the *Work* contemplated by the *Contract*, of the foregoing.
- .2 All *Bidders* are advised that contractors are prohibited from using any form of Alcohol or Drug, including Recreational Cannabis, before and/or during work hours, and this must be strictly adhered to by all parties. The *Successful Bidder* shall be responsible for advising their employees or any other person doing or contracting to do the whole or any part of the *Work* contemplated by the *Contract*, of the foregoing.

1.18 SUB CONTRACTS AND ASSIGNMENT

- .1 Only sub-contractors that are allowed for in the Price Bid Form and approved in advance by the Board's authorized representative may be used for this work. No other sub-contractors shall be used for this work unless prior written authorization is obtained from the Board's authorized representative.

Prior to the award of the Contract to a Bidder, should objection be raised by either the Board or Consultant to any proposed Subcontractor, the names of other Subcontractors shall be obtained by that said Bidder until same are approved. Once final approval of Subcontractors is obtained no change will be permitted by the Successful Bidder without prior written approval by the Board and Consultant.

It is mutually agreed and understood that the Successful Bidder shall not assign, transfer, convey, sublet or otherwise dispose of the contract or the right, title or interest therein, or the Bidder's power to execute such a contract, to any other person, firm, company or corporation without the express written consent of the Board. Any unauthorized, assignment shall be void and have no force or effect against the Board. If assignment is authorized, any work undertaken by sub-contractor shall, in no way, relieve the Successful Bidder of its responsibilities to the Board.

1.19 CONFIDENTIALITY

- .1 Any information or documentation provided by a *Bidder* in connection with a Request for Tender is subject to the provisions of the Municipal Freedom of Information and Protection of Privacy Act, R.S.O., 1990, C.m.56. As a consequence, the Greater Essex County District School Board cannot guarantee the confidentiality of documentation and information provided during the course of the Request for Tender.
- .2 Subject to the provisions of the Municipal Freedom of Information and Protection of Privacy Act, the Owner will make reasonable efforts to protect the confidentiality of information and documentation submitted by a supplier as part of the *Bidder's Bid*. All *Bidders* are encouraged to designate and identify to the Owner all information and/or documentation it regards as being confidential in nature. Please note: neither the entire *Bid*, nor the identity of the *Bidder* can be designated as confidential.

1.20 ACKNOWLEDGEMENT, REPRESENTATION AND WARRANTY

- .1 The *Bidder* acknowledges that a policy (BA-01 Procurement) has been implemented by Owner which provides generally that the Owner will not enter into any agreement for the provisions of materials and/or services with a *Bidder*, where such *Bidder* is directly or indirectly a party to any actual pending or threatened suits, actions, litigation proceedings, arbitrations, alternative dispute resolutions, investigations or claims (the "**Claim**" or "**Claims**") by or against or otherwise involving the Owner and the *Bidder*.
- .2 In the event that the *Bid* of the *Bidder* should be successful, the award of such Contract will not be issued by the Owner to the *Bidder* unless, at the request of the Owner, the *Bidder* executes a further document (**Acknowledgement, Representation and Warranty**) which provides that at the time of the awarding of the *Bid* to the *Bidder*, that the *Bidder* is not at that time directly or indirectly a party to any Claims by or against or otherwise involving the Owner and the *Bidder*.
- .3 If at any time it is found that the Acknowledgement, Representation and Warranty delivered by the *Bidder* to the Owner was inaccurate at the time of the award and that the *Bidder* was, at that time, directly or indirectly a party to a **Claim** by or against or otherwise involving the Owner and the *Bidder*; the Owner shall have the option to terminate the Contract upon the Owner giving written notice of such termination to the *Bidder*.
- .4 If at any time after the awarding of the Tender to the *Bidder* and prior to the completion of requirements of the Request For Tender, the *Bidder* becomes, directly or indirectly a party to any **Claim** by or against or otherwise involving the Owner and the *Bidder*; the Owner shall have the option to terminate the Contract upon the Owner giving written notice of such termination to the *Bidder*, and in such instance the *Bidder* shall be responsible to the Owner for any additional costs incurred by the Owner with respect to the completion of requirements of the Request For Tender.
- .5 The *Successful Bidder* shall execute Appendix A: Acknowledgment, Representation and Warranty and Appendix B: Conflict of Interest Acknowledgement and Declaration prior to commencing Work.

1.21 IDENTICAL BIDS

- .1 If more than one substantially compliant *Bid* is received where the stipulated price *Bids* are identical, the *Bidder* with the lowest overall separate prices that are accepted by the Owner will be selected. If no separate prices exist or are accepted, the Owner, in the presence of two witnesses will flip a coin to determine the award.

1.22 CONFIDENTIAL INFORMATION OF THE BOARD

- .1 All information provided by or obtained from the *Board* in any form in connection with this Request for Tender either before or after the issuance of this Request For Tender:
 - (a) is the sole property of the *Board* and must be treated as confidential;
 - (b) is not to be used for any purpose other than replying to this Request For Tender and the performance of the Contract;
 - (c) must not be disclosed without prior written authorization from the *Board*; and
 - (d) shall be returned by the *Bidders* to the *Board* immediately upon the request of the *Board*.

1.22 RESERVED RIGHTS OF THE BOARD — GENERAL

- .1 In addition to any other express rights or any other rights which may be implied in the circumstances, the *Board* reserves the right to:
 - (a) exercise any of the rights set out in the *Bid*;
 - (b) make public the names of any or all *Bidders*;
 - (c) request written clarification or the submission of supplementary written information from any *Bidder* and incorporate such clarification or supplementary written information into the *Bidder's Bid*, at the *Board's* discretion, provided that clarification or submission of supplementary written information shall not be an opportunity for the *Bidder* to correct errors in its *Bid* or to change or enhance the *Bidder's Bid* in any material manner, except as may otherwise be expressly set out herein;
 - (d) waive formalities and accept *Bids* that substantially comply with the requirements of this Request For Tender, in the *Board's* sole discretion;
 - (e) afford an opportunity to a *Bidder* to correct unintentional errors of form between the opening of *Bids* and the awarding of the Contract and, if it does so, the *Board* shall afford the same opportunity to all *Bidders*;
 - (f) verify with any *Bidder* or with a third party any information set out in a *Bid*;
 - (g) verify with a *Bidder* that it satisfies the conditions for participation and is capable of fulfilling the terms of the Contract, where in the sole discretion of the *Board*, it receives a *Bid* from a *Bidder* that is abnormally lower than prices in other *Bids*;
 - (h) check references other than those provided by any *Bidder*;
 - (i) disqualify any *Bidder* whose *Bid* contains misrepresentations or any other inaccurate or misleading information, or whose *Bid* is determined to be non-compliant with the requirements of the Request For Tender;
 - (j) disqualify a *Bid* where the *Bidder* has or the principals of a *Bidder* have previously breached a contract with the *Board*, or has otherwise failed to perform such contract to the reasonable satisfaction of the *Board*, the *Bidder* has been charged or convicted of an offence in respect of a contract with the *Board*, or the *Bidder* reveals a Conflict of Interest or Unfair Advantage in its *Bid* or a Conflict of Interest or evidence of any Unfair Advantage is brought to the attention of the *Board*;
 - (k) disqualify any *Bid* of any *Bidder* who has breached any Applicable Laws or who has engaged in conduct prohibited by this Request For Tender, including where there is any evidence that the *Bidder* or any of its employees or agents colluded with any other *Bidder*, its employees or agents in the preparation of the *Bid*;
 - (l) make changes, including substantial changes, to this Request For Tender provided that those changes

- are issued by way of addenda in the manner set out in this Request For Tender;
- (m) accept or reject a *Bid* if only one *Bid* is submitted;
 - (n) reject a subcontractor proposed by a *Bidder*;
 - (o) select any *Bidder* other than the *Bidder* whose *Bid* reflects the lowest cost to the *Board*;
 - (p) cancel this Request For Tender process at any stage and issue a new Request For Tender for the same or similar requirements, including where:
 - (i) the *Board* determines it would be in the best interest of the *Board* not to award a Contract;
 - (ii) the *Bid* prices exceed the *Bid* prices received by the *Board* for previously supplied similar Work;
 - (iii) the *Bid* prices exceed the funds available for the Work; or
 - (iv) the funding for Work has been revoked, modified, or has not been approved; and where the *Board* cancels this Tender, the *Board* may do so without providing reasons, and the *Board* may thereafter issue a new Request For Tender, request for qualifications, sole source or do nothing;
 - (q) negotiate;
 - (r) terminate negotiations of the Contract with any Preferred *Bidder* at any time and for any reason without liability to such *Bidder*; and
 - (s) reject any or all *Bids* in its absolute discretion, including where a *Bidder* has launched legal proceedings against the *Board* or is otherwise engaged in a dispute with the *Board*.

These reserved rights are in addition to any rights which may be implied in the circumstances, and the *Board* shall not be liable for any expenses, costs, losses or any direct or indirect damages incurred or suffered by any *Bidder* or any party resulting from the *Board* exercising any of its express or implied rights under this *Bid*.

- .2 By submitting a *Bid*, the *Bidder* authorizes the collection by the *Board* of the information identified in this Request For Tender, which the *Board* may request from any third party.

1.24 ENTITLEMENT TO A DE-BRIEFING

- .1 In accordance with the Broader Public Sector Procurement Directive unsuccessful *Bidders* are entitled to a debriefing, during which they will be provided with feedback regarding their submission. In order to be debriefed, unsuccessful *Bidders* must contact the Supervisor of Purchasing and Supply or her designate to request a debriefing within sixty (60) days from the date of the notification of award.

1.25 INVOICING AND STATUTORY DECLARATIONS

- .1 The Successful Bidder shall submit a draft invoice, a Statutory Declaration and WSIB Certificate of Clearance to the Consultant by the 8th of the month and a proper invoice by the 15th of the month, for each progress draw. The Consultant will issue a Certificate of Payment, which is subject to notice of non-payment of a disputed portion of the invoice, if any.
- .2 The invoice, issued by the 15th of the month, must be a "Proper Invoice" as defined in the Construction Act (Ontario).

1.26 PROJECT SCHEDULE AND COVID-19

- .1 The Board acknowledges that the Ontario government has made the health and safety of workers is a top concern amid the global COVID-19 pandemic and that specific procedures must be followed with an increased focus on health and safety in order to keep job sites open.
- .2 Bidders shall bid this project, based on the project schedule in this Instructions to Bidders or as revised by a further addendum.
- .3 In addition to having a Board approved COVID Safety Plan, the Successful Bidder must provide written acknowledgement that all employees and sub-contractors on site have read and understood the plan prior to access to the site. The Successful Bidder shall ensure all measures will be taken by employees and Sub-Contractors to prevent the spread of COVID-19 and be in compliance with the requirements under the Occupational Health and Safety Act, its associated regulations and public health directives issued by the Chief Medical Officer of Health.
- .4 If there are any changes to PPE / safety requirements by the federal, provincial and/or Windsor and Essex County Health Unit, the Board may require the Successful Bidder to update their COVID Safety Plan, prior to being given approval to commence work.
- .5 If at any time during the project, non-critical construction is deemed a non-essential service, due to COVID-19, the Successful Bidder is still expected to continue with work that may be done remotely, such as shop drawings, ordering materials and equipment, etc.
- .6 If the commencement of work on site is delayed, due to COVID-19 and it impacts the schedule, the Board will revise the schedule accordingly.

***** **END OF SECTION** *****

APPENDIX A

ACKNOWLEDGMENT, REPRESENTATION AND WARRANTY

**TO: GREATER ESSEX COUNTY DISTRICT SCHOOL BOARD
(THE “SCHOOL BOARD”)
451 Park Street West
Windsor, ON N9A 5V4**

**FROM: _____
(THE “*BIDDER*”)**

**RE: REQUEST FOR TENDER # 2021-73T
CVRIS Upgrades at MD Bennie and Harrow Public Schools**

The *Bidder* acknowledges that a policy has been implemented by School Board which provides generally that the School Board will not enter into any agreement for the provision of materials and/or services with a *Bidder*, where such *Bidder* is directly or indirectly a party to any actual pending or threatened suits, actions, litigation proceedings, arbitrations, alternative dispute resolutions, investigations or claims (the “**Claim**” or “**Claims**”) by or against or otherwise involving the School Board and the *Bidder*.

The *Bidder* further acknowledges that as a pre-condition to being awarded the contract, the *Bidder* is required to execute this acknowledgement, representation and warranty and to deliver an executed copy of this acknowledgement, representation and warranty to the Supervisor of Purchasing & Supply, Greater Essex County District School Board, 451 Park Street West, Windsor, ON N9A 5V4.

In that regard, the *Bidder* does hereby acknowledge, warrant and agree as follows:

1. At the date of the execution of this Acknowledgment, Representation and Warranty and the submission of a Tender by the *Bidder* to the School Board with respect to the above Tender, the *Bidder* is not, directly or indirectly, a party to any actual, pending or threatened suits, actions, litigation proceedings, arbitrations, alternative dispute resolutions, investigations or claims by or against or otherwise involving the School Board and the *Bidder*.
2. In the event that the Tender of the *Bidder* in the above Tender should be successful, that the award of such Tender will not be issued by the School Board to the *Bidder* unless, at the request of the School Board, the *Bidder* executes a further document (the “**Subsequent Acknowledgment, Representation and Warranty**”) which provides that at the time of the awarding of the Tender to the *Bidder*, that the *Bidder* is not at that time directly or indirectly a party to any actual, pending or threatened suits, actions, litigation proceedings, arbitrations, alternative dispute resolutions, investigations or claims by or against or otherwise involving the School Board and the *Bidder*.
3. The School Board may, in its sole and unfettered discretion, reject the Tender of the *Bidder*, if the *Bidder* shall be in breach of any of the terms of this Acknowledgment, Representation and Warranty at the time of the submission of the Tender by the *Bidder*, or at the time of the award by the School Board to the *Bidder* of the above Tender. Alternatively, the School Board may at its sole and absolute discretion terminate any agreement which may result from the acceptance by the School Board of the Tender submitted by the *Bidder* with respect to the above Tender in the event that it should be determined that the *Bidder* was directly or indirectly a party to any actual pending or threatened suits, actions, litigation proceedings, arbitrations, alternative dispute resolutions, investigations, or claims by or against or otherwise involving the School Board and the *Bidder* at

the date of the signing of this Acknowledgment, Representation and Warranty or at the time of the signing of any Subsequent Acknowledgment, Representation and Warranty with respect to the above Tender.

4. At the request of the School Board, the *Bidder* may be required from time to time to execute a further Subsequent Acknowledgment, Representation and Warranty encompassing the terms of this Acknowledgment, Representation and Warranty and in the event that as a result of the signing of a Subsequent Acknowledgment, Representation and Warranty by the *Bidder* it should be determined that the *Bidder* is in breach of the terms of this Acknowledgment, Representation and Warranty or any Subsequent Acknowledgment, Representation and Warranty, then the School Board shall, at its option, be entitled to terminate the agreement entered into between the School Board and the *Bidder*, in which instance, the agreement entered into between the School Board and the *Bidder* shall cease and be of no further force and effect, except to the extent of any monies that may be owing by one party to the other at the date of such termination, and except as to any damages incurred by the School Board as a result of such default or breach, as the case may be, for which the *Bidder* may be found to be liable in the manner provided by the construction agreement to be entered into between the School Board and the *Bidder*.
5. The *Bidder* acknowledges and agrees that the execution of this document by the *Bidder* and the submission of this document in executed form by the *Bidder* to the School Board by facsimile or by electronic mail shall have the same effect as if an original executed copy of this documented had been delivered by the *Bidder* to School Board.

DATED this _____ day of _____, 20____.

Legal Company Name of Bidder:

Authorized Signature:

Print Name & Title of Authorized Signing Officer:

I have the authority to bind the above Corporation.

APPENDIX B
CONFLICT OF INTEREST ACKNOWLEDGEMENT AND DECLARATION

THE UNDERSIGNED DECLARES that this Bid Submission is made in good faith and without any connection, knowledge, comparison of figures, or arrangements with any other company, firm or corporation making a Bid for the same *Work* and is, in all respects, fair and without collusion with any other *Bidder* for the Contract, and without fraud. The undersigned also represent and warrants that to the best of the undersigned's knowledge and belief, no actual or potential conflict of interest exists with respect to the submission of this *Bid* or performance of the *Work*, services or contractual obligations that may be requested, other than those disclosed hereunder. The undersigned confirms that, where the *Board* discovers that the undersigned has failed to disclose all actual or potential conflicts of interest, the *Board* may disqualify the undersigned or terminate any *Contract* awarded to the undersigned pursuant to this *Bid* process. The undersigned understands that, for the purposes hereof, "conflict of interest" also includes:

- (a) in relation to the procurement process, the undersigned has an unfair advantage or engages in conduct, directly or indirectly, that may give the undersigned an unfair advantage, including:
 - (i) having or having access to information in the preparation of the undersigned's *Bid* that is confidential to the *Board* and not available to other *Bidders*;
 - (ii) communicating with any person with a view to influencing preferred treatment in the procurement process; or
 - (iii) engaging in conduct that compromises or could be seen to compromise the integrity of the open and competitive process and render that process non-competitive and unfair; or
- (b) in relation to the performance of the *Work*, services or contractual obligations, the undersigned's other commitments, relationships or financial interests:
 - (i) could or could be perceived to exercise an improper influence over the objective, unbiased and impartial exercise of the undersigned's independent judgment, or
 - (ii) could or could be perceived to compromise, or impair or be incompatible with the effective performance of the undersigned's *Work*, services or contractual obligations.

THE UNDERSIGNED DECLARES that, having read and understood the above provisions, the undersigned hereby confirm, to the best of the undersigned's knowledge and belief:

<input type="checkbox"/>	there are no actual or potential conflicts of interest with respect to the submission of this response or the <i>Work</i> , services or contractual obligations which may be performed by the undersigned; or	
<input type="checkbox"/>	the following are details of actual or potential conflicts of interest of which the undersigned is aware:	
	→
	→
	→

The undersigned further understands that if, subsequent to the signing of this Acknowledgement and Declaration, a potential or actual, direct or indirect conflict of interest arises, the undersigned must disclose this to the *Board*.

Signature of Authorized Signing Officer _____

Printed Name of Authorized Signing Officer _____

Position _____

Name of Firm _____

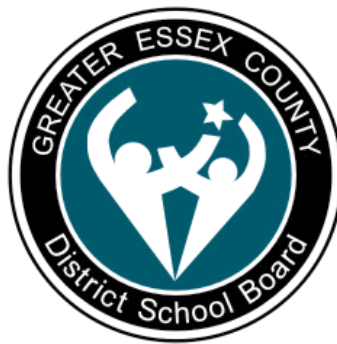
Date _____



CCDC 2- 2008

Stipulated Price Contract

Supplementary Conditions



Last revised by GECDSB February 1, 2021

The Standard Construction Document CCDC 2 2008 for a Stipulated Price Contract, English version, consisting of the Agreement Between *Owner* and *Contractor*, Definitions and General Conditions of the Stipulated Price Contract, Parts 1 to 12 inclusive, governing same is hereby made part of these *Contract Documents*, with the following amendments, additions and modifications:

AGREEMENT BETWEEN OWNER AND CONTRACTOR

ARTICLE A-3 – CONTRACT DOCUMENTS

3.1 Add the following to the list of *Contract Documents* in paragraph 3.1:

- Amendments to CCDC 2 – 2008
- *Drawings*
- *Specifications*
- Performance Bond
- Labour and Material Payment Bond
- GECDSD Privacy and Cyber Security Schedule

ARTICLE A-5 – PAYMENT

5.1.3 Amend paragraph 5.1.3, in the first line, by deleting the words “...the issuance of the...” and replacing them with “...receipt of the *Consultant’s*...”

5.3.1 Delete paragraph 5.3.1 in its entirety and replace it with the following:

Interest

.1 Should either party fail to make payments as they become due under the terms of the Contract or in an award by arbitration or court, interest shall also become due and payable on such unpaid amounts at 0% above the prime rate. Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by the Royal Bank of Canada for prime business loans, as it may change from time to time.

ARTICLE A-9 – CONFLICT OF INTEREST

Add new Article A-9 – Conflict of Interest:

- 9.1 The *Contractor*, all of the *Subcontractors* and *Suppliers* and any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall not engage in any activity or provide any services where such activity or the provision of such services creates a conflict of interest (actually or potentially, in the sole opinion of the *Owner*) with the provision of the *Work* pursuant to the *Contract*. The *Contractor* acknowledges and agrees that a conflict of interest, as described in this Article A-9, includes, but is not limited to, the use of *Confidential Information* where the *Owner* has not specifically authorized such use.
- 9.2 The *Contractor* shall disclose to the *Owner*, in writing, without delay, any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest, including the retention of any *Subcontractor* or *Supplier* that is directly or indirectly affiliated with or related to the *Contractor*.
- 9.3 The *Contractor* covenants and agrees that it will not hire or retain the services of any employee or previous employee of the *Owner* where to do so constitutes a breach by such employee or previous employee of the *Owner’s* conflict of interest policy, as it may be amended from time to time, until after completion of the *Work* under the *Contract*.

- 9.4 It is of the essence of the *Contract* that the *Owner* shall not have direct or indirect liability to any *Subcontractor* or *Supplier*, and that the *Owner* relies on the maintenance of an arm's-length relationship between the *Contractor* and its *Subcontractors* and *Suppliers*. Consistent with this fundamental term of the *Contract*, the *Contractor* will not enter into any agreement or understanding with any *Subcontractor* or *Supplier*, whether as part of any contract or any written or oral collateral agreement, pursuant to which the parties thereto agree to cooperate in the presentation of a claim for payment against the *Owner*, directly or through the *Contractor*, where such claim is, in whole or in part, in respect of a disputed claim by the *Subcontractor* or *Supplier* against the *Contractor*, where the payment to the *Subcontractor* or *Supplier* by the *Contractor* is agreed to be conditional or contingent on the ability to recover those amounts or a portion thereof from the *Owner*, failing which the *Contractor* shall be saved harmless from all or a portion of those claims. The *Contractor* acknowledges that any such agreement would undermine the required arm's-length relationship and constitute a conflict of interest. For greater certainty, the *Contractor* shall only be entitled to advance claims against the *Owner* for amounts pertaining to *Subcontractor* or *Supplier* claims where the *Contractor* has actually paid or unconditionally acknowledged liability for those claims or where those claims are the subject of litigation or binding arbitration between the *Subcontractor* or *Supplier* and the *Contractor* has been found liable for those claims.
- 9.5 Notwithstanding paragraph 7.1.2 of GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT, a breach of this Article by the *Contractor*, any of the *Subcontractors*, or any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall entitle the *Owner* to terminate the *Contract*, in addition to any other rights and remedies that the *Owner* has in the *Contract*, in law, or in equity.

DEFINITIONS

Add the following new definitions:

16. Amend Definition 16 by adding the following to the end of the Definition:

Provide has this meaning whether or not the first letter is capitalized.

27. **Confidential Information**

Confidential Information means all the information or material of the *Owner*, or information about the property of the *Owner*, that is of a commercial, sensitive, proprietary or confidential nature, whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description (such as drawings and move-lists) which is communicated to, or comes into the possession or control or knowledge of, the *Contractor* at any time, but *Confidential Information* shall not include information that:

- 1) is or becomes generally available to the public without fault or breach on the part of the *Contractor*, including without limitation breach of any duty of confidentiality owed by the *Contractor* to the *Owner* or to any third party, but only after that information becomes generally available to the public;
- 2) the *Contractor* can demonstrate to have been rightfully obtained by the *Contractor* from a third party who had the right to transfer or disclose it to the *Contractor* free of any obligation of confidence;
- 3) the *Contractor* can demonstrate to have been rightfully known to or in the possession of the *Contractor* at the time of disclosure, free of any obligation of confidence; or
- 4) is independently developed by the *Contractor* without use of any *Confidential Information*.

28. **Construction Schedule**

Construction Schedule means the schedule for the performance of the *Work* provided by the *Contractor* pursuant to GC 3.5, including any amendments to the *Construction Schedule* made pursuant to the *Contract Documents*.

29. Force Majeure

Force Majeure means any cause, beyond the *Contractor's* control, other than bankruptcy or insolvency, which prevents the performance by the *Contractor* of any of its obligations under the *Contract* and the event of *Force Majeure* was not caused by the *Contractor's* default or active commission or omission and could not be avoided or mitigated by the exercise of reasonable effort or foresight by the *Contractor*. *Force Majeure* includes *Labour Disputes*, fire, unusual delay by common carriers or unavoidable casualties, pandemics, epidemics, quarantines or civil disturbances caused by severe medical emergencies or diseases, government declared emergencies, acts, orders, legislation, regulations or directives of any government or other public authority, acts of a public enemy, war, riot, sabotage, blockage, embargo, lightning, earthquake, or acts of God.

30. Install

Install means the following:

- Install and connect.
- Position and adjust *Products* in final placement,
- Affix and anchor *Products* in final placement, in accordance with manufacturers' instructions and *Contract Documents*,
- Commission and adjust *Products* for proper operation.

Install has this meaning whether or not the first letter is capitalized.

31. Labour Dispute

Labour Dispute means any lawful or unlawful labour problems, work stoppage, labour disruption, strike, job action, slow down, lock-outs, picketing, refusal to work or continue to work, refusal to supply materials, cessation or work or other labour controversy which does, or might, affect the *Work*.

32. Overhead

Overhead means all site and head office operations and facilities, all site and head office administration and supervision; all duties and taxes for permits and licenses required by the authorities having jurisdiction at the *Place of the Work*; all requirements of Division 1, including but not limited to submittals, warranty, quality control, calculations, testing and inspections; meals and accommodations; and, tools, expendables and clean-up costs.

33. Request for Information/RFI

Request for Information or *RFI* means written documentation sent by the *Contractor* to the *Owner* or to the *Owner's* representative or the *Consultant* requesting written clarification(s) and/or interpretation(s) of the *Drawings* and/or *Specifications*, *Contract* requirements and/or other pertinent information required to complete the *Work* of the *Contract* without applying for a change or changes to the *Work*.

34. Make Good

Make Good means to restore to at least the quality of, and leave in no worse condition than, the original.

35. Proposed Change

A *Proposed Change* or *Contemplated Change Order* is a written instruction by the *Consultant* directing the *Contractor* to provide the following:

- A change to the scope of the *Work*.

- Amount of an adjustment in the *Contract Price* or *Cash Allowance*.
- The extent of the adjustment in the *Contract Time* if any.

36. Proper Invoice

A Proper Invoice shall include the following:

1. Contractor invoices;
2. The period in which services were supplied;
3. How the Work was authorized;
4. Description of services or materials supplied;
5. The amount payable;
6. The contact information of the payment administrator;
7. Any other prescribed information required by applicable lien legislation.

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

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

GC 1.1 CONTRACT DOCUMENTS

- 1.1.6 Add the following to the end of paragraph 1.1.6:

The *Specifications* are divided into divisions and sections for convenience but shall be read as a whole and neither such division nor anything else contained in the *Contract Documents* will be construed to place responsibility on the *Owner* or the *Consultant* to settle disputes among the *Subcontractors* and *Suppliers* with respect to such divisions. The *Drawings* are, in part, diagrammatic and are intended to convey the scope of the *Work* and indicate general and appropriate locations, arrangements and sizes of fixtures, equipment and outlets. The *Contractor* shall obtain more accurate information about the locations, arrangements and sizes from study and coordination of the *Drawings*, including *Shop Drawings* and shall become familiar with conditions and spaces affecting those matters before proceedings with the *Work*. Where site conditions require reasonable minor changes where the change requires only the additional labour of one half hour or less, the *Contractor* shall make such changes at no additional cost to the *Owner*. Similarly, where known conditions or existing conditions interfere with new installation and require relocation, the *Contractor* shall include such relocation in the *Work*. The *Contractor* shall arrange and install fixtures and equipment in such a way as to conserve as much headroom and space as possible. The schedules are those portions of the *Contact Documents*, wherever located and whenever issued, which compile information of similar content and may consist of drawings, tables and/or lists.

- 1.1.6.1 Add Paragraph 1.1.6.1 as follows:

"The *Contractor* is the sole arbiter and coordinator of the *Contract* and neither the organization of the specifications into divisions, sections and parts, nor the arrangement of the drawings shall oblige the *Consultant*, or the *Owner* to act as arbiter to establish limits of responsibility between the *Contractor* and its *Subcontractors*."

- 1.1.7 Amend paragraph 1.1.7.1 by adding "Amendments to CCDC 2 – 2008" before "the Agreement between the Owner and the Contractor" and deleting the reference to "Supplementary Conditions". Add "GECDSD Privacy and Cyber Security Schedule" after "the Agreement between the Owner and the Contractor".

Add new paragraphs 1.1.7.5, 1.1.7.6, 1.1.7.7, 1.1.7.8, 1.1.7.9 and 1.1.7.10 as follows:

- .5 noted materials and annotations on the *Drawings* shall govern over the graphic representation of the *Drawings*.
- .6 finishes in the room finish schedules shall govern over those shown on the *Drawings*.
- .7 architectural drawings shall have precedence over structural, plumbing, mechanical, electrical and landscape drawings insofar as outlining, determining and interpreting conflicts over the required design intent of all architectural layouts and architectural elements of construction, it being understood that the integrity and installation of the systems designed by the *Consultant* or its sub-*Consultants* are to remain with each of the applicable drawing disciplines.
- .8 should reference standards contained in the *Specifications* conflict with the *Specifications*, the *Specifications* shall govern. Should reference standards and *Specifications* conflict with each other or if certain requirements of the *Specifications* conflict with other requirements of the *Specifications*, the more stringent requirements shall govern.

1.1.8

1.1.11 Add 1.1.11 as follows:

Syntax

.1 Where the words ‘accepted’, ‘reviewed’, ‘designated’, ‘directed’, ‘inspected’, ‘instructed’, ‘permitted’, ‘required’, and ‘selected’ are used in the *Contract Documents*, they are deemed to be followed by the words ‘by the *Consultant*’, unless the context provides otherwise.

.2 Where the words ‘acceptable’, ‘submit’ and ‘satisfactory’ are used in the *Contract Documents*, they are deemed to be followed by the words ‘to the *Consultant*’, unless the context provides otherwise.

1.1.12 Add 1.1.12 as follows:

In the event of any conflict or discrepancy between the provisions of: (1) the Agreement between *Owner* and *Contractor*, Definitions, and The General Conditions of the Stipulated Price Contract with the Supplementary Conditions; and (2) the *Consultant*’s document(s), the Agreement between *Owner* and *Contractor*, Definitions, and The General Conditions of the Stipulated Price Contract with the Supplementary Conditions shall take precedence over any of the *Consultant*’s document(s) and govern the relationship between the *Owner* and the *Consultant*.

1.1.13 Add 1.1.13 as follows:

Unless a physical version of any *Contract Document* is absolutely necessary, the *Owner*, *Consultant* and *Contractor* agree that the *Contract Documents* may be retained and/or recorded in electronic format, provided that the electronic version is reliable, viewable, retainable, can be provided to or examined by a party, or reproduced in physical format by a party, and that any requirement in the *Contract* to retain *Contract Documents* can be satisfied by the retention of an electronic version of such *Contract Document(s)*. For certainty, once the physical version of any *Contract Document* has been reproduced and retained in electronic format in accordance with this requirement, the party having control over such *Contract Document* may destroy the physical version, and any obligation in the *Contract* to provide the *Contract Document* will be satisfied by the provision of the electronic version of such *Contract Document*. The *Owner*, *Consultant* and *Contractor* shall determine whether it is absolutely necessary for a physical version of any *Contract Document* to be retained, acting reasonably. In the event that a party requires the reproduction of an electronic *Contract Document* in physical form, unless the *Contract* stipulates otherwise, the cost of such reproduction shall be borne by the party requiring such reproduction.

1.1.14 Add 1.1.14 as follows:

Unless a physical version and signature of any *Contract Document* is absolutely necessary, the *Owner*, *Consultant* and *Contractor* agree that the *Contract Documents* may be executed, signed, delivered, provided or transmitted in electronic format, provided that the electronic signature and/or version is secure, reliable, viewable, retainable, can be provided to or examined by any party, or reproduced readily in physical format by any party, and that any requirement in the *Contract* to sign and/or provide *Contract Documents* can be satisfied by the electronic signature and/or delivery of an electronic version of such *Contract Document(s)*. An “electronic signature” shall be any electronic information that a person creates or adopts in order to sign a *Contract Document* and that is in, attached to or associated with the *Contract Document*, provided that the method of signing and reliability of the signature is acceptable to the *Owner*, in its absolute discretion, and which meets the *Owner’s* information technology standards. Acceptable forms of electronic signature include, but are not limited to, the typing of the party’s authorized signing officer’s name or the inclusion of an image of the party’s authorized signing officer’s signature so long as the electronic signature is sufficient to identify the party’s authorized signing officer. The party’s authorized signing officer agrees that whatever form of electronic signature is provided constitutes a signature for the purposes of executing all documents requested under this *Contract*. However, if an electronic signature is determined by the *Owner* to be unacceptable, the party providing the electronic signature shall provide within seven (7) days a new electronic signature in a form and format acceptable to the *Owner*. The method of delivery by electronic means shall be determined by the *Owner*, acting reasonably, and may include, without limitation, electronic mail or the provision of the *Contract Documents* on a Universal Serial Bus (USB), or any other private and secured method of electronic delivery acceptable to and accessible by the *Owner*, in its absolute discretion.

1.1.15 Add 1.1.15 as follows:

The *Contractor* agrees that at all times it will comply with the GECDSD Privacy and Cyber Security Schedule provided by the *Owner* to the *Contractor* and identified in ARTICLE A-3 CONTRACT DOCUMENTS, and ensure that any *Subcontractor*, *Supplier*, agent, employee, or other person performing any portion of the *Work* also complies with the GECDSD Privacy and Cyber Security Schedule. In accordance with the GECDSD Privacy and Cyber Security Schedule, the *Contractor* shall not disclose any personal or commercially sensitive information, as defined therein, to any *Subcontractor*, *Supplier*, agent, employee, or other person performing any portion of the *Work* without first obtaining that person’s agreement to be bound by the requirements of the GECDSD Privacy and Cyber Security Schedule.

1.1.16 Add 1.1.16 as follows:

The *Contractor* agrees to keep any and all Confidential Information of the *Owner* strictly confidential, to only use any Confidential Information for the purposes of completing the *Work* under this *Contract*, and shall not discuss or disclose any Confidential Information except to: (i) those *Subcontractors*, *Suppliers*, agents, employees, and other persons performing any portion of the *Work* on behalf of the *Contractor* who have a need to know the Confidential Information in performing their portion of the *Work*, provided that any such recipient of the *Owner’s* Confidential Information first acknowledges and agrees to keep the Confidential Information confidential in accordance with this paragraph; (ii) any other person approved by the *Owner*; or (iii) as required by law. The *Contractor* shall be liable for any and all damages, losses, or costs of the *Owner* resulting from any breach of this paragraph. The *Contractor* acknowledges that it shall be responsible to the *Owner* for any breach of this paragraph by any of its *Subcontractors*, *Suppliers*, agents, employees, and other persons to whom it has disclosed Confidential Information. The *Contractor* acknowledges that disclosure or use of any Confidential Information in violation of this *Contract* could cause irreparable harm to the *Owner* for which monetary damages may be difficult to ascertain or be an inadequate remedy. The *Contractor* therefore agrees that the *Owner* will have the right, in addition to its other rights and remedies, at law or in equity, to seek temporary or permanent injunctive or interlocutory relief for any violation of this paragraph, and to not interfere with, delay or prevent the *Owner* from doing so. Upon receipt of a written request, and upon termination or expiration of this *Contract*, the *Contractor*, and anyone to whom the *Contractor* has provided Confidential Information, shall promptly return or destroy all Confidential Information, including all reproductions and copies thereof and shall immediately delete all references thereto stored electronically, and provide written confirmation of having done so to the *Owner*. The

obligations under this paragraph shall survive the termination or expiration of this *Contract* for a period of five (5) years.

GC 1.3 RIGHTS AND REMEDIES

1.3.2 Delete the word “No” from the beginning of paragraph 1.3.2 and substitute the words:

“Except with respect to the requirements set out in paragraphs 2.2.13, 6.4.1, 6.5.4, 6.6.1 and 8.2.2, no...”

GC 1.4 ASSIGNMENT

Delete paragraph 1.4.1 in its entirety and replace with the following:

1.4.1 The *Contractor* shall not assign the *Contract*, or any portion thereof, without the prior written consent of the *Owner*. The *Owner* shall be entitled to assign the *Contract* to a corporation, partnership or other entity (the “Assignee”). Upon the assumption by the Assignee of the *Owner’s* obligations under the *Contract*, the *Owner* shall be released from its obligations under the *Contract*.

GC 1.5 EXAMINATION OF DOCUMENTS AND SITE

Add new GC 1.5 – EXAMINATION OF DOCUMENTS AND SITE as follows:

- 1.5.1 The *Contractor* declares and represents that in tendering for the *Work*, and in entering into a *Contract* with the *Owner* for the performance of the *Work*, it has investigated for itself the character of the *Work* to be done, based on information generally available from a site visit. The *Contractor* has assumed and does hereby assume all risk of conditions now existing or arising in the course of the *Work* which might or could make the *Work*, or any items thereof more expensive in character, or more onerous to fulfil, than was contemplated or known when the tender was made or the *Contract* signed.
- 1.5.2 The *Contractor* also declares that in tendering for the *Work* and in entering into this *Contract*, the *Contractor* did not and does not rely upon information furnished by the *Owner* or any of its agents or servants respecting the nature or confirmation of the ground at the site of the *Work*, or the location, character, quality or quantity of the materials to be removed or to be employed in the construction of *Work*, or the character of the construction machinery and equipment or facilities needed to perform the *Work*, or the general and local performance of the work under the *Contract* and expressly waives and releases the *Owner* from all claims with respect to the said information with respect to the *Work*.

GC 1.6 TIME IS OF THE ESSENCE OF THE CONTRACT

Add new GC 1.6 - TIME IS OF THE ESSENCE OF THE CONTRACT as follows:

1.6.1 All time limits stated in the *Contract Documents* are of the essence of the *Contract*.

GC 2.1 AUTHORITY OF THE CONSULTANT

2.1.3 Delete from line 2, "against whom the *Contractor* makes no reasonable objection and".

GC 2.2 ROLE OF THE CONSULTANT

2.2.7 Delete the words “Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER”.

- 2.2.8 Amend paragraph 2.2.8 by the addition of the following at the end of the paragraph:

Questions shall be submitted by the *Contractor* in the form of a “*Request for Information*”.

- 2.2.13 Amend paragraph 2.2.13 by the addition of the following to the end of that paragraph:

If, in the opinion of the *Contractor*, the *Supplemental Instruction* involves an adjustment in the *Contract Price* or in the *Contract Time*, it shall, within ten (10) *Working Days* of receipt of a *Supplemental Instruction*, provide the *Consultant* with a notice in writing to that effect. Failure to provide written notification within the time stipulated in this paragraph 2.2.13 shall be deemed an acceptance of the *Supplemental Instruction* by the *Contractor*, without any adjustment in the *Contract Price* or *Contract Time*.

- 2.2.19 Add new paragraph 2.2.1.9 as follows:

The *Consultant* or the *Owner*, acting reasonably, may from time to time require the *Contractor* to remove from the *Project* any personnel of the *Contractor*, including project managers, superintendents or *Subcontractors*. Such persons shall be replaced by the *Contractor* in a timely fashion to the satisfaction of the *Consultant* or the *Owner*, as the case may be, at no cost to the *Owner*.

GC 2.3 REVIEW AND INSPECTION OF THE WORK

- 2.3.2 Amend paragraph 2.3.2 by adding the words “and *Owner*” after the words “*Consultant*” in the second and third lines.

- 2.3.3 Delete paragraph 2.3.3 in its entirety and replace it with the following:

The *Contractor* shall furnish promptly two copies to the *Consultant* and one copy to the *Owner* of all certificates and inspection reports relating to the *Work*.

- 2.3.4 Insert the word “review” after the word “inspections” in the first line of paragraph 2.3.4.

- 2.3.5 In the first line after “*Consultant*”, add “or the *Owner*”.

- 2.3.8 Add a new paragraph 2.3.8 as follows:

The *Consultant* will conduct periodic reviews of the *Work* in progress, to determine general conformance with the requirements of the *Contract Documents*. Such reviews, or lack thereof, shall not give rise to any claims by the *Contractor* in connection with construction means, methods, techniques, sequences and procedures, nor in connection with construction safety at the *Place of Work*, responsibility for which belongs exclusively to the *Contractor*.

GC 2.4 DEFECTIVE WORK

- 2.4.1 Amend GC 2.4.1 by inserting “, the *Owner* and/or its agent” in the first sentence following “rejected by the *Consultant*”.

Add new paragraphs 2.4.1.1 and 2.4.1.2:

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

2.4.1.2 The *Contractor* shall prioritize the correction of any defective work, which, in the sole discretion of the *Owner* through the *Consultant*, adversely affects the day to day operations of the *Owner* or which, in the sole discretion of the *Consultant*, adversely affects the progress of the *Work*.

2.4.2 Delete paragraph 2.4.2 in its entirety and replace it with the following:

The *Contractor* shall promptly pay the *Owner* for costs incurred by the *Owner*, the *Owner's* own forces or the *Owner's* other contractors, for work destroyed or damaged or any alterations necessitated by the *Contractor's* removal, replacement or re-execution of defective work.

Add new paragraph 2.4.4 as follows:

2.4.4 Neither acceptance of the *Work* by the *Consultant* or the *Owner*, nor any failure by the *Consultant* or the *Owner* to identify, observe or warn of defective *Work* or any deficiency in the *Work* shall relieve the *Contractor* from the sole responsibility for rectifying such defect or deficiency at the *Contractor's* sole cost, even where such failure to identify, observe or warn is negligent.

GC 3.1 CONTROL OF THE WORK

3.1.3 Add a new paragraph 3.1.3 as follows:

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

3.1.4 Add a new paragraph 3.1.4 as follows:

Notwithstanding the provisions of paragraphs 3.1.1 and 3.1.2, the *Owner* shall have access to the site at all times to monitor all aspects of construction. Such access shall in no circumstances affect the obligations of the *Contractor* to fulfill its contractual obligations.

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

3.2.2.1 Delete paragraph 3.2.2.1 in its entirety.

3.2.2.2 Delete paragraph 3.2.2.2 in its entirety.

3.2.2.3 Delete paragraph 3.2.2.3 in its entirety.

3.2.2.4 Delete paragraph 3.2.2.4 in its entirety.

3.2.3.2 Delete paragraph 3.2.3.2 and replace it with the following:

Co-ordinate and schedule the activities and work of other contractors and *Owner's* own forces with the *Work* of the *Contractor* and connect as specified or shown in the *Contract Documents*.

3.2.3.4 Add new paragraph 3.2.3.4 as follows:

Subject to GC 9.4 CONSTRUCTION SAFETY, for the *Owner's* own forces and for other contractors, assume overall responsibility for compliance with all aspects of the applicable health and safety legislation in force at the

Place of the Work, including all of the responsibilities of the “constructor”, pursuant to the *Occupational Health and Safety Act* (Ontario).

3.2.7 Add new paragraph 3.2.7:

Placing, installing, connecting of the *Work* by the *Owner’s* own forces or by other contractors, on and to the *Contractor’s Work* will not relieve the *Contractor’s* responsibility to provide and maintain the specified warranties.

GC 3.3 TEMPORARY WORK

3.3.2 In paragraph 3.3.2, in the second line after the words “where required by law”, insert “or the *Consultant*”.

GC 3.4 DOCUMENT REVIEW

3.4.1 Delete paragraph 3.4.1 in its entirety and substitute new paragraph 3.4.1:

The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency, or omission the *Contractor* may discover. Such review by the *Contractor* shall be undertaken with the standard of care described in paragraph 3.14.1 of the *Contract*. Except for its obligation to make such review and report the result, the *Contractor* does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. Provided it has exercised the degree of care and skill described in this paragraph 3.4.1, the *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* could not reasonably have discovered through the exercise of the required standard of care.

3.4.2 Add new paragraph 3.4.2. as follows:

If, at any time, the *Contractor* finds errors, inconsistencies, or omissions in the *Contract Documents* or has any doubt as to the meaning or intent of any part thereof, including laying out of the *Work*, the *Contractor* shall immediately notify the *Consultant*, and request instructions, a *Supplemental Instruction*, *Change Order*, or *Change Directive*, as the case may require, and the *Contractor* shall not proceed with the work affected until the *Contractor* has received such instructions, a *Supplemental Instruction*, *Change Order* or *Change Directive*. Neither the *Owner* nor the *Consultant* will be responsible for the consequences of any action of the *Contractor* based on oral instructions.

3.4.3 Add new paragraphs 3.4.3 as follows:

Errors, inconsistencies and/or omissions in the *Drawings* and/or *Specifications* which do not allow completion of the *Work* of the *Contract* shall be brought to the *Consultant’s* attention prior to the execution of the *Contract* by means of an *RFI*.

GC 3.5 CONSTRUCTION SCHEDULE

3.5.1 Delete paragraph 3.5.1 in its entirety and replace with the following:

The *Contractor* shall:

- .1 within five (5) calendar days of receiving written confirmation of the award of the *Contract*, prepare and submit to the *Owner* and the *Consultant* for their review and acceptance, a construction schedule in the format indicated below that indicates the timing of the activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time* and in accordance with the *Contract Documents*. Such schedule is to include a

delivery schedule for *Products* whose delivery is critical to the schedule for the *Work* or are required by the *Contract* to be included in a *Products* delivery schedule. The *Contractor* shall employ construction scheduling software, being the latest version of “Microsoft Project” that permits the progress of the *Work* to be monitored in relation to the critical path established in the schedule. The *Contractor* shall provide the schedule and any successor or revised schedules in both electronic format and hard copy. Once accepted by the *Owner* and the *Consultant*, the construction schedule submitted by the *Contractor* shall become the baseline construction schedule; and,

- .2 provide the expertise and resources, such resources including manpower and equipment, as are necessary to maintain progress under the accepted baseline construction schedule or revised schedule accepted by the *Owner* pursuant to GC 3.5 CONSTRUCTION SCHEDULE; and,
- .3 monitor the progress of the *Work* on a weekly basis relative to the baseline construction schedule, or any revised schedule accepted by the *Owner* pursuant to GC 3.5 CONSTRUCTION SCHEDULE, update and submit to the *Consultant* and *Owner* the electronic and hard copy schedule on a monthly basis, at a minimum, or as required by the *Consultant* and advise the *Consultant* and the *Owner* weekly in writing of any variation from the baseline or slippage in the schedule; and,
- .4 provide overtime work without change to the *Contract Price* if such work is deemed necessary to meet the schedule; and,
- .5 ensure that the *Contract Price* shall include all costs required to phase or stage the *Work*.

3.5.2 Add new paragraph 3.5.2 as follows:

If, at any time, it should appear to the *Owner* or the *Consultant* that the actual progress of the *Work* is behind schedule or is likely to become behind schedule, or if the *Contractor* has given notice of such to the *Owner* or the *Consultant* pursuant to subparagraph 3.5.1.3, the *Contractor* shall, either at the request of the *Owner* or the *Consultant*, or following giving notice pursuant to subparagraph 3.5.1.3, take appropriate steps to cause the actual progress of the *Work* to conform to the schedule or minimize the resulting delay. Within five (5) calendar days of the request by the *Owner* or the *Consultant* or the notice being given pursuant to subparagraph 3.5.1.3, the *Contractor* shall produce and present to the *Owner* and the *Consultant* a plan demonstrating how the *Contractor* will achieve the recovery of the last accepted schedule.

3.5.3 The *Contractor* is responsible for performing the *Work* within the *Contract Time*. Any schedule submissions revised from the accepted baseline construction schedule or revised schedule accepted by the *Owner* pursuant to GC 3.5 CONSTRUCTION SCHEDULE, during construction are not deemed to be approved extensions to the *Contract Time*. All extensions to the *Contract Time* must be made in accordance with the *Contract Documents*.

GC 3.6 SUPERVISION

Delete paragraph 3.6.1 in its entirety and replace with the following:

- 3.6.1 The *Contractor* shall employ a competent full-time superintendent, acceptable to the *Owner* and *Consultant*, who shall be in full time attendance at the *Place of Work* while the *Work* is being performed. The superintendent shall not be changed by the *Contractor* without valid reason which shall be provided in writing and shall not be changed without prior consultation with an agreement by the *Owner* and the *Consultant*. The *Contractor* shall replace the superintendent within 7 *Working Days* of the *Owner*’s written notification, if the superintendent’s performance is not acceptable to the *Owner*. The *Contractor* shall provide the *Owner* and the *Consultant* with the names, addresses and telephone numbers of the superintendent referred to in this paragraph 3.6.1 and other responsible persons who may be contacted for emergency and other reasons during non-working hours.

Delete paragraph 3.6.2 in its entirety and replace with the following:

- 3.6.2 The superintendent, and any project manager appointed by the *Contractor*, shall represent the *Contractor* at the *Place of Work* and shall have full authority to act on written instructions given by the *Consultant* and/or the *Owner*. Instructions given to the superintendent or the project manager shall be deemed to have been given to the *Contractor* and both the superintendent and any project manager shall have full authority to act on behalf of the *Contractor* and bind the *Contractor* in matters related to the *Contract*.
- 3.6.3 Add new paragraph 3.6.3, 3.6.4, 3.6.5 and 3.6.6 as follows:
- The *Owner* may, at any time during the course of the *Work*, request the replacement of the appointed representative(s). Immediately upon receipt of the request, the *Contractor* shall make arrangements to appoint an acceptable replacement, which is approved by the *Owner*.
- 3.6.4 The supervisory staff assigned to the *Project* shall also be fully competent to implement efficiently all requirements for scheduling, coordination, field engineering, reviews, inspections and submittals defined in the *Specifications*, and have minimum 5 years documented “Superintendent/Project Management” experience.
- 3.6.5 The *Consultant* and *Owner* shall reserve the right to review the record of experience and credentials of supervisory staff assigned to the *Project* prior to commencement of the *Work*.
- 3.6.6 A superintendent assigned to the *Work* shall be “Gold Seal Certified” as per the Canadian Construction Association; or a superintendent that can demonstrate the requisite experience and success related to the *Project* to the sole satisfaction of the *Owner*.

GC 3.7 SUBCONTRACTORS AND SUPPLIERS

- 3.7.1.1 In paragraph 3.7.1.1 add to the end of the second line “including any warranties and service agreements which extend beyond the term of the *Contract*.”
- 3.7.1.2 In subparagraph 3.7.1.2 after the words “the *Contract Documents*” insert the words “including any required surety bonding”.
- Delete paragraph 3.7.2. in its entirety and replace with the following:
- 3.7.2 Substitution of any *Subcontractor* and/or *Suppliers* after submission of the *Contractor*’s bid will not be accepted unless a valid reason is given in writing to and approved by the *Owner*, whose approval may be arbitrarily withheld. The reason for substitution must be provided to the *Owner* and to the original *Subcontractor* and/or *Supplier* and the *Subcontractor* and/or *Supplier* shall be given the opportunity to reply to the *Contractor* and *Owner*. The *Contractor* shall be fully aware of the capability of each *Subcontractor* and/or *Supplier* included in its bid, including but not limited to technical ability, financial stability and ability to maintain the proposed construction schedule.

Add new paragraphs 3.7.7 and 3.7.8 as follows:

- 3.7.7 Where provided in the *Contract*, the *Owner* may assign to the *Contractor*, and the *Contractor* agrees to accept, any contract procured by the *Owner* for *Work* or services required on the *Project* that has been pre-tendered or pre-negotiated by the *Owner*, and upon such assignment, the *Owner* shall have no further liability to any party for such contract.
- 3.7.8 The *Contractor* covenants that each subcontract or supply contract which the *Contractor* enters into for the purpose of performing the *Work* shall expressly provide for the assignment thereof to the *Owner* (at the option of

the *Owner*) and the assumption by the *Owner* of the obligations of the *Contractor* thereunder, upon the termination of the *Contract* and upon written notice by the *Owner* to the other parties to such subcontracts or supply contracts, without the imposition of further terms or conditions; provided, however, that until the *Owner* has given such notice, nothing herein contained shall be deemed to create any contractual or other liability upon the *Owner* for the performance of obligations under such subcontracts or supply contracts and the *Contractor* shall be fully responsible for all of its obligations and liabilities (if any) under such subcontracts and supply contracts.

GC 3.8 LABOUR AND PRODUCTS

3.8.2 Delete paragraph 3.8.2 and substitute with the following:

Products provided shall be new and shall conform to all current applicable specifications of the Canadian Standards Association, Canadian Standards Board or General Standards Board, ASTM, National Building Code, provincial and municipal building codes, fire safety standards, and all governmental authorities and regulatory agencies having jurisdiction at the *Place of the Work*, unless otherwise specified. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*. *Products* brought on to the *Place of the Work* by the *Contractor* shall be deemed to be the property of the *Owner*, but the *Owner* shall be under no liability for loss thereof or damage thereto arising from any cause whatsoever. The said *Products* shall be at the sole risk of the *Contractor*. Workmanship shall be, in every respect, first class and the *Work* shall be performed in accordance with the best modern industry practice.

3.8.3 Amend paragraph 3.8.3 by adding the words, “..., agents, *Subcontractors* and *Suppliers*...” after the word “employees” in the first line.

Add new paragraphs 3.8.4, 3.8.5, 3.8.6, 3.8.7, 3.8.8 and 3.8.9 as follows:

3.8.4 Upon receipt of a written notice from the *Owner*, the *Contractor* shall immediately remove from the *Place of the Work*, tradesmen and labourers whose conduct jeopardizes the safety of the *Owner's* operations. Immediately upon receipt of the request, the **Contractor** shall make arrangements to appoint an acceptable replacement.

3.8.5 Upon receipt of written notice from the *Consultant*, the *Contractor* shall remove from the *Place of Work*, tradesmen and labourers whose *Work* is unsatisfactory to the *Consultant* or who are considered by the *Consultant* to be unskilled or otherwise objectionable.

3.8.6 The *Contractor* shall cooperate with the *Owner* and its representatives and shall take all reasonable and necessary actions to maintain stable and harmonious labour relations with respect to the *Work* at the *Place of the Work*, including cooperation to attempt to avoid *Work* stoppages, trade union jurisdictional disputes and other *Labour Disputes*. Any costs arising from labour disputes shall be at the sole expense of the *Contractor*.

3.8.7 The cost for overtime required beyond the normal *Working Day* to complete individual construction operations of a continuous nature, such as pouring or finishing of concrete or similar work, or *Work* that the *Contractor* elects to perform at overtime rates without the *Owner* requesting it, shall not be chargeable to the *Owner*.

3.8.8 All manufactured *Products* which are identified by their proprietary names or by part or catalogue number in the *Specifications* shall be used by the *Contractor*. No substitutes for such specified *Products* shall be used without the written approval of the *Owner* and the *Consultant*. Substitutes will only be considered by the *Consultant* when submitted in sufficient time to permit proper review and investigation. When requesting approval for the use of substitutes, the *Contractor* shall include in its submission any proposed change in the *Contract Price*. The *Contractor* shall use all proprietary *Products* in strict accordance with the manufacturer's directions. Where there is a choice of proprietary *Products* specified for one use, the *Contractor* may select any one of the *Products* so specified for this use.

3.8.9 Materials, appliances, equipment and other *Products* are sometimes specified by reference to brand names, proprietary names, trademarks or symbols. In such cases, the name of a manufacturer, distributor, *Supplier* or

dealer is sometimes given to assist the *Contractor* to find a source *Supplier*. This shall not relieve the *Contractor* from its responsibility from finding its own source of supply even if the source names no longer supplies the *Product* specified. If the *Contractor* is unable to obtain the specified *Product*, the *Contractor* shall supply a substitute product equal to or better than the specified *Product*, as approved by the *Consultant* with no extra compensation. Should the *Contractor* be unable to obtain a substitute *Product* equal to or superior to the specified *Product* and the *Owner* accepts a different *Product*, the *Contract Price* shall be adjusted accordingly, as approved by the *Consultant*.

GC 3.9 DOCUMENTS AT THE SITE

3.9.1 Delete paragraph 3.9.1 in its entirety and substitute the following:

Notwithstanding paragraph 1.1.13, the *Contractor* shall keep one physical copy of the current *Contract Documents*, *Supplemental Instructions*, contemplated *Change Orders*, *Change Orders*, *Change Directives*, cash allowance disbursement authorizations, reviewed *Shop Drawings*, submittals, reports and records of meeting at the *Place of the Work*, in good order and available to the *Owner* and *Consultant*.

3.9.2 Add new paragraph 3.9.2:

The *Contractor* shall note on the *Contract Documents* all deviations in construction complete with revised dimensions to clearly identify the as-built conditions for all construction trades.

GC 3.10 SHOP DRAWINGS

3.10.1 Delete paragraph 3.10.1 in its entirety and replace with the following:

The *Contractor* shall provide shop drawings as described in the *Contract Documents* and as the *Consultant* may reasonably request. Unless a physical version of any *Shop Drawing* is absolutely necessary, the *Owner*, *Consultant* and *Contractor* agree that the *Shop Drawings* may be provided and retained in electronic format by way of a Universal Serial Bus (USB) flash drive device or another agreed upon electronic storage device capable of readily displaying and delivering electronic versions of the *Shop Drawings*, and which can be used to reproduce the same in physical format. Nothing herein shall prevent either the *Owner*, *Consultant*, or *Contractor* from reproducing physical versions of any *Shop Drawings* as needed. This paragraph shall not apply though to the *Contractor's* requirement under paragraph 3.9.1.

3.10.9 Delete paragraph 3.10.9 in its entirety and substitute the following:

At the time of providing *Shop Drawings*, the *Contractor* shall advise the *Consultant* in writing of any deviations in *Shop Drawings* from the requirements of the *Contract Documents*. The *Consultant* shall indicate the acceptance of such deviation expressly in writing. Where manufacturers' literature is submitted in lieu of scaled drawings, it shall be clearly marked in ink, to indicate the specific items for which review is requested.

Add new paragraphs 3.10.13, 3.10.14, 3.10.15, 3.10.16, 3.10.17 and 3.10.18 as follows:

3.10.12 Delete paragraph 3.10.12 and replace with the following:

The *Consultant* will review and return *Shop Drawings* and submittals in accordance with the schedule agreed upon in paragraph 3.10.3, The *Contractor* shall allow the *Consultant* a minimum of 10 Working Days to review *Shop Drawings* from the date of receipt. If resubmission of *Shop Drawings* is required, a further 10 Working Day period is required for the *Consultant's* review.

3.10.13 Reviewed *Shop Drawings* shall not authorize a change in the *Contract Price* and/or the *Contract Time*.

- 3.10.14 The *Contractor* shall prepare a *Shop Drawings* schedule acceptable to the *Owner* and the *Consultant* prior to the first application for payment. A draft of the proposed *Shop Drawings* schedule shall be submitted by the *Contractor* to the *Consultant* and the *Owner* for approval. The draft *Shop Drawings* schedule shall clearly indicate the phasing of *Shop Drawings* submissions. The *Contractor* shall periodically re-submit the *Shop Drawings* schedule to correspond to changes in the construction schedule.
- 3.10.15 Except where the parties have agreed to a different *Shop Drawings* schedule pursuant to paragraph 3.10.3, the *Contractor* shall comply with the requirements for *Shop Drawings* submissions stated in the *Specifications*.
- 3.10.16 The *Contractor* shall not use the term “by others” on *Shop Drawings* or other submittals. The related trade, *Subcontractor* or *Supplier* shall be stated.
- 3.10.17 Certain *Specifications* sections require the *Shop Drawings* to bear the seal and signature of a professional engineer. Such professional engineer must be registered in the jurisdiction of the *Place of the Work* and shall have expertise in the area of practice reflected in the *Shop Drawings*.

GC 3.11 USE OF THE WORK

- 3.11.1 In the second line between the words “permits” and “or” add, “by direction of the *Owner* or *Consultant*.”
- 3.11.3 Add new paragraph 3.11.3 as follows:

The *Owner* shall have the right to enter or occupy the *Work* in whole or in part for the purpose of placing fittings and equipment, or for other use before *Substantial Performance of the Work*, if, in the opinion of the *Consultant*, such entry and occupation does not prevent or substantially interfere with the *Contractor* in the performance of the *Contract* within the *Contract Time*. Such entry or occupation shall neither be considered as acceptance of the *Work*, nor in any way relieve the *Contractor* from its responsibility to complete the *Contract*.

GC 3.12 CUTTING AND REMEDIAL WORK

Add new paragraphs 3.12.5 and 3.12.6 as follows:

- 3.12.5 Unless specifically stated otherwise in the *Specifications*, the *Contractor* shall do all cutting and making good necessary for the proper installation and performance of the *Work*.
- 3.12.6 To avoid unnecessary cutting, the *Contractor* shall lay out its work and advise the *Subcontractors*, when necessary, where to leave holes for installation of pipes and other work.

GC 3.13 CLEAN UP

- 3.13.1 At the end of the paragraph 3.13.1, add the following:

The *Contractor* shall remove accumulated waste and debris at least once a week as a minimum or as required by the nature of the *Work*.

- 3.13.2 In paragraph 3.13.2, in the fourth line add the word “materials” between the word “tools” and the words “*Construction Equipment*”.
- 3.13.3 In paragraph 3.13.3, in the first and second lines add the word “materials” between the word “tools” and the words “*Construction Equipment*”.

Add new paragraphs 3.13.4, 3.13.5, 3.13.6 and 3.13.7 as follows:

- 3.13.5 The *Contractor* shall clean up garbage during and after construction, and maintain the site in a neat and orderly condition on a daily basis. Prior to leaving the site at the end of construction, the *Contractor* shall make good all damage to the building and its components caused by the performance of the *Work* or by any *Subcontractor* or *Supplier*. The *Contractor* shall leave the site in a clean and finished state; remove all equipment and materials; remove all paint, stains, labels, dirt, etc. from the *Work*; and touch up all damaged painted areas.
- 3.13.6 Without limitation to or waiver of the *Owner's* other rights and remedies, the *Owner* shall have the right to back charge to the *Contractor* the cost of damage to the site caused by transportation in and out of the site by the *Contractor*, *Subcontractors* or *Suppliers*, if not repaired before final payment.
- 3.13.7 The *Contractor* shall dispose of debris at location and in a manner acceptable to the *Owner*, and authorities having jurisdiction in the area of the *Work* and the disposal area, and cover containers with tarpaulins tied in place to prevent scattering of debris on site and during transport.

GC 3.14 CONTRACTOR STANDARD OF CARE

Add a new General Condition 3.14 – CONTRACTOR STANDARD OF CARE as follows:

- 3.14.1 In performing its services and obligations under the *Contract*, the *Contractor* shall exercise the standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The *Contractor* acknowledges and agrees that throughout the *Contract*, the performance of the *Contractor's* obligations, duties and responsibilities shall be judged against this standard. The *Contractor* shall exercise the same standard of care, skill and diligence in respect of any *Products*, personnel or procedures which it may recommend to the *Owner*.
- 3.14.2 The *Contractor* further represents, covenants and warrants to the *Owner* that:
- .1 the personnel it assigns to the *Project* are appropriately experienced;
 - .2 it has a sufficient staff of qualified and competent personnel to replace any of its appointed representatives, subject to the *Owner's* approval, in the event of death, incapacity, removal or resignation; and
 - .3 there are no pending, threatened or anticipated claims, liabilities or contingent liabilities that would have a material effect on the financial ability of the *Contractor* to perform its work under the *Contract*.

GC 3.15 OCCUPANCY OF THE WORK

- 3.15.1 The *Owner* reserves the right to take possession of and use for any intended purpose any portion or all of the undelivered portion of the *Project* even though the *Work* may not be substantially performed, provided that such taking possession and use will not interfere, in any material way, with the progress of the *Work*. The taking of possession or use of any such portion of the *Project* shall not be deemed to be the *Owner's* acknowledgement or acceptance of the *Work* or the *Project*, nor shall it relieve the *Contractor* of any of its obligations under the *Contract*.
- 3.15.2 Whether the *Project* contemplates *Work* by way of renovations in buildings which will be in use or be occupied during the course of the *Work* or where the *Project* involves *Work* that is adjacent to a structure which is in use or is occupied, the *Contractor*, without in any way limiting its responsibilities under the *Contract*, shall take all reasonable steps to avoid interference with fire exits, building access and egress, continuity of electric power and all other utilities, to suppress dust and noise and to avoid conditions likely to propagate mould or fungus of any kind and all other steps reasonably necessary to promote and maintain the safety and comfort of the users and occupants of such structures or adjacent structures.

GC 3.16 RIGHT OF ENTRY

Add a new General Condition 3.16 – RIGHT OF ENTRY as follows:

- 3.16 The *Owner* shall have the right to enter upon and occupy the *Work*, in whole or in part for the purpose of placing fittings and equipment or for such other uses as it may wish. Both the *Owner* and the *Contractor* shall co-operate with the other, so as to permit the *Contractor* to complete the *Work* and the *Owner* to place fittings and equipment in the most efficient manner possible. Such entry and occupancy shall not be interpreted as acceptance of the *Work*, nor in any way relieve the *Contractor* from its responsibilities under the *Contract*.

GC 4.1 CASH ALLOWANCES

- 4.1.1 Delete the second sentence in paragraph 4.1.1

- 4.1.3 Amend paragraph 4.1.3 by adding the following after the word “*Consultant*”:

in the form of a Cash Allowance Disbursement Authorization (CADA) signed by the *Owner* and the *Consultant*.

- 4.1.4 Delete paragraph 4.1.4 in its entirety and substitute the following:

Where the actual cost of the *Work* under any cash allowance exceeds the amount of the allowance, any unexpended amounts from other cash allowances shall be reallocated, at the *Consultant’s* direction, to cover the shortfall, and, in that case, there shall be no additional amount added to the *Contract Price* for overhead and profit. Only where the actual cost of the *Work* under all cash allowances exceeds the total amount of all cash allowances shall the *Contractor* be compensated for the excess incurred and substantiated, plus an amount for overhead and profit on the excess only, as set out in the *Contract Documents*.

- 4.1.5 Delete paragraph 4.1.5 in its entirety and substitute the following:

The net amount of any unexpended cash allowances, after providing for any reallocations as contemplated in paragraph 4.1.4, shall be deducted from the *Contract Price* by *Change Order* without any adjustment for the *Contractor’s* overhead and profit on such amount.

Add new paragraphs 4.1.8 and 4.1.9 as follows:

- 4.1.8 The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work*, which are to be paid for from cash allowances.
- 4.1.9 Cash allowances cover the net cost to the *Contractor* of services, *Products*, *Construction Equipment*, freight, unloading, handling, storage, installation, provincial sales tax, and other authorized expenses incurred in performing any *Work* stipulated under the cash allowances but does not include any *Value Added Taxes* payable by the *Owner* and the *Contractor*.

GC 4.2 CONTINGENCY ALLOWANCE

- 4.2.3 Add new paragraph 4.2.3.1 as follows:

Cash Allowance Disbursement Authorization (CADA), signed by the *Owner* and the *Consultant* shall be used to authorize expenditures under the contingency allowance.

GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

- 5.1.1 Delete paragraph 5.1.1 in its entirety.

5.1.2 Delete paragraph 5.1.2 in its entirety.

GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

Delete paragraph 5.2.2 in its entirety and substitute the following:

5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed in writing by the parties. The amount claimed shall be for the value, proportionate to the amount of the *Contract*, or work performed and *Products* delivered and incorporated into the *Work* at that date. No amount claimed shall include products delivered and incorporated into the *Work*, unless the products are free and clear of all security interests, liens and other claims of third parties.

Each application for payment, except the first, shall include a statutory declaration, in the current CCDC 9A form, up to the date of the application for payment. Each application for payment (including the first the holdback upon Substantial Performance, and final payments), shall also include:

- .1 A certificate, issued by an agency or firm providing workers' compensation insurance to the *Contractor*, verifying that coverage is in force at the time of making the application for payment, and that coverage will remain in force for at least sixty (60) days thereafter.
- .2 A declaration by the *Contractor* verifying that the performance of the *Work* is in compliance with all applicable regulatory requirements respecting environmental protection, first safety, public safety and occupational health and safety.
- .3 A pre-approved schedule of values, supplied by the *Contractor*, for Divisions 1 through 14 of the *Work*, aggregating the total amount of the *Contract Price*.
- .4 A separate pre-approved schedule of values, supplied by each *Subcontractor*, for each of Division 15, 16, and 17 of the *Work*, aggregating the total amount of the *Contract Price*.
- .5 A Proper Invoice, and invoices to support all claims against the cash allowance.
- .6 An acceptable construction schedule pursuant to GC 3.5.

5.2.3 Amend paragraph 5.2.3 by adding the following to the end of that paragraph:

No amount claimed shall include *Products* delivered to the *Place of the Work* unless the *Products* are free and clear of all security interests, liens, and other claims of third parties.

5.2.7 Delete existing paragraph 5.2.7 and add new paragraphs 5.2.7, and 5.2.8 as follows:

5.2.7 The *Contractor* shall prepare and maintain current as-built drawings which shall consist of the *Drawings* and *Specifications* revised by the *Contractor* during the *Work*, showing changes to the *Drawings* and *Specifications*, which current as-built drawings shall be maintained by the *Contractor* and made available to the *Consultant* for review with each application for progress payment. The *Consultant* shall retain a reasonable amount for the value of the as-built drawings not presented for review.

5.2.8 Prior to each application for payment, the *Contractor* and the *Consultant* shall jointly review the progress of the *Work*.

GC 5.3 PROGRESS PAYMENT

5.3.1.2 In the first sentence amend as follows: After the words "issue to the *Owner*" delete "and copy to the *Contractor*". After the words "after the receipt of the" add "complete". Delete the word 10 and replace it with the word 5.

5.3.1.3 Delete subparagraph 5.3.1.3 in its entirety and substitute as follows:

the *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement – PAYMENT no later than 20 calendar days after the date of a complete certificate of payment is issued by the *Consultant*, unless, within 7 calendar days of the receipt of the certificate for payment issued by the *Consultant* it provides notice to the *Contractor* in the prescribed form that it refuses to pay all or a portion of the amount requested in the application for payment.

Add new paragraphs 5.3.2 and 5.3.3 as follows:

- 5.3.2 If the *Contractor* fails to provide all documentation as required by GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT, the *Contractor* or *Owner* shall be entitled to return the application for progress payment to the *Contractor* for completion. The 5 day review period by the *Consultant* and 20 day payment period by the *Owner* will commence upon receipt of a complete application for progress payment.
- 5.3.3 Payment will be mailed to the *Contractor*. The payment date shall be the date the cheque is mailed. Delay resulting from mail shall not be used in calculating payment date.

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

5.4.1 Add to the end of the paragraph 5.4.1 the following:

Where a portion of the *Work* is ready for use or is being used for the purposes intended and the *Owner* and the *Contractor* agree not to complete the *Work* expeditiously, the price of the services or materials remaining to be supplied and required to complete the *Work* shall be deducted from the *Contract Price* in determining *Substantial Performance of the Work*.

5.4.2 Delete paragraph 5.4.2 in its entirety and substitute the following:

The *Consultant* will review the *Work* to verify the validity of the application and shall promptly, and in any event, no later than 30 calendar days after receipt of the *Contractor's* complete deficiency list and application, the *Consultant* shall:

- .1 prepare a final deficiency list incorporating all items to be completed or corrected. Each item is to have an indicated value for correction or completion. Determination of the value is defined in GC 5.10 – DEFICIENCY HOLDBACK. The final deficiency list complete with values is to be included with the *Consultant's* draft verification and shall be reviewed with the *Owner* prior to 5.4.2.2.
- .2 having completed 5.4.2.1, the *Consultant* shall:
 - .1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
 - .2 state the date of *Substantial Performance of the Work* in a certificate and issue a copy of that certificate to each the *Owner* and the *Contractor* containing the information required by the applicable lien legislation.

5.4.3 Delete paragraph 5.4.3 in its entirety and substitute the following:

Following the issuance of the certificate of *Substantial Performance of the Work*, the following shall apply to completing the *Work*:

- .1 *Contractor* is to complete the *Work* within sixty (60) calendar days.
- .2 No payments will be processed between *Substantial Performance of the Work* and the completion of the *Work*.

- .3 The *Owner* reserves the right to contract out any or all unfinished *Work* if it has not been completed within sixty (60) days of *Substantial Performance of the Work* without prejudice to any other right or remedy and without affecting the warranty period. The cost of completing the *Work* shall be deducted from the *Contract Price*.

Add new paragraphs 5.4.4, 5.4.5, 5.4.6 and 5.4.7 as follows:

- 5.4.4 Within the time prescribed by the construction/builder's lien legislation in force at the *Place of the Work*, or where there is no legislation or no time prescribed, within a reasonable time of receiving a copy of the certificate of *Substantial Performance of the Work* signed by the *Consultant*, the *Contractor* shall take whatever steps are required to publish or post a signed copy of the certificate, as is required by such legislation. If the *Contractor* fails to comply with this provision, the *Owner* may take the required steps pursuant to the legislation and charge the *Contractor* for any costs so incurred.
- 5.4.5 Prior to submitting its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant* all:
- .1 guarantees;
 - .2 warranties;
 - .3 certificates;
 - .4 final testing and balancing reports;
 - .5 distribution system diagrams;
 - .6 spare parts;
 - .7 maintenance manuals;
 - .8 samples;
 - .9 reports and correspondence from authorities having jurisdiction in the *Place of the Work*;
 - .10 shop drawings;
 - .11 inspection certificates;
 - .12 red-lined record drawings from the construction trailer in two copies.

and other materials or documentation required to be submitted under the *Contract*, together with written proof acceptable to the *Owner* and the *Consultant* that the *Work* has been substantially performed in conformance with the requirements of municipal, governmental, and utility authorities having jurisdiction in the *Place of the Work*. The *Consultant* shall refuse to certify *Substantial Performance of the Work* if the submittals referred to in this paragraph 5.4.5 are not provided by the *Contractor*.

- 5.4.6 The *Owner* shall withhold, from amounts otherwise payable to the *Contractor*, an amount not to exceed one (1) percent of the *Contract Price* as security for the obligation of the *Contractor* to provide an electronic red-lined record drawing.
- 5.4.7 The publication by the *Contractor* of the Certificate of Substantial Performance of the Work shall constitute a waiver by the *Contractor* of all claims whatsoever against the *Owner* under this *Contract* whether, for a change in the *Contract Price*, extension of *Contract Time* or otherwise, except those made in writing, prior to the *Contractor's* application for payment upon *Substantial Performance of the Work*, and still unsettled.

GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

Add new subparagraph 5.5.1.3 as follows

5.5.1.3 submit a statement that no written notices of liens have been received by it

- 5.5.2 Amend paragraph 5.5.2 by adding the following sentence to the end of that paragraph:

A reserve fund may be retained by the *Owner* to secure the correction of deficiencies and/or warranty claims. Included in the reserve fund would be all *Consultant* and *Owner* costs related to the correction of deficiencies and/or warranty claims.

5.5.3 Delete paragraph 5.5.3 in its entirety.

5.5.5 Delete paragraph 5.5.5 in its entirety.

GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

Delete GC 5.6 in its entirety.

GC 5.7 FINAL PAYMENT

5.7.1 Delete paragraph 5.7.1 in its entirety and substitute as follows:

When the *Contractor* considers that the *Work* is completed, as defined in the lien legislation applicable to the *Place of the Work* or if such definition does not exist, in accordance with other applicable legislation, industry practice or provisions which may be agreed to between the parties, the *Contractor* shall submit an application for final payment. The *Contractor's* application for final payment shall be accompanied by any documents or materials not yet delivered pursuant to paragraph 5.4.5, together with complete and final as-built drawings and:

.1 the *Contractor's* written request for release of the deficiency holdback, including a statement that no written notices of lien have been received by it;

.2 a Statutory Declaration CCDC 9A-2001.

The *Work* shall be deemed not to be completed until all of the aforementioned documents have been delivered, and the *Owner* may withhold payment in respect of the delivery of any documents in an amount determined by the *Consultant* in accordance with the provisions of GC 5.8 - WITHHOLDING OF PAYMENT.

5.7.2 Delete from the first line of paragraph 5.7.2 the word 10 and replace it with the word 5.

5.7.4 Delete from the second line of paragraph 5.7.4 the words, "5 calendar days after the issuance" and substitute the words "20 calendar days after receipt of".

GC 5.8 WITHHOLDING OF PAYMENT

Delete paragraph 5.8.1 and replace with the following:

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

GC 5.10 DEFICIENCY HOLDBACK

Add a new General Condition 5.10 as follows:

5.10.1 Notwithstanding any provisions contained in the *Contract Documents* concerning certification and release of monies to the *Contractor*, the *Owner* reserves the right to establish a deficiency holdback, at the time of the review for *Substantial Performance*, based on a 200% dollar value of the deficiencies listed by the *Consultant*. The value of work outstanding for the calculation of *Substantial Performance of the Work* under the *Construction Lien Act*

(Ontario) shall utilize the 100% dollar value. No individual deficiency will be valued at less than two hundred dollars (\$200.00). The *Owner* shall retain the entire deficiency holdback amount until completion of all of the deficiencies listed by the *Consultant* to the satisfaction of the *Consultant*.

GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

Add new paragraphs 6.1.3, 6.1.4, 6.1.5, 6.1.6, 6.1.7 and 6.1.8 as follows:

- 6.1.3 The *Contractor* agrees that changes resulting from construction coordination, including but not limited to, site surface conditions, site coordination, and *Subcontractor* and *Supplier* coordination are included in the *Contract Price* and the *Contractor* shall be precluded from making any claim for a change in the *Contract Price* as a result of such changes.
- 6.1.4 Labour costs shall be actual, prevailing rates at the *Place of the Work* paid to workers, plus statutory charges on labour including WSIB, unemployment insurance, Canada pension, vacation pay, hospitalization and medical insurance. The *Contractor* shall provide these rates, when requested by the *Consultant*, for review and/or agreement.
- 6.1.5 Quotations for changes to the *Work* shall be accompanied by itemized breakdowns together with detailed, substantiating quotations or cost vouchers from *Subcontractors* and *Suppliers*, submitted in a format acceptable to the *Consultant* and including any costs associated with extensions in *Contract Time*.
- 6.1.6 When both additions and deletions covering related *Work* or substitutions are involved in a change to the *Work*, payment, including *Overhead* and profit, shall be calculated on the basis of the net difference, if any, with respect to that change in the *Work*.
- 6.1.7 No extension to the *Contract Time* shall be granted for changes in the *Work* unless the *Contractor* can clearly demonstrate that such changes significantly alter the overall construction schedule submitted at the commencement of the *Work*. Extensions of *Contract Time* and all associated costs, if approved pursuant to GC 3.4.2, are to be included in the relevant *Change Order*.
- 6.1.8 When a change in the *Work* is proposed or required, the *Contractor* shall within 10 calendar days submit to the *Consultant* for review a claim for a change in *Contract Price* and/or *Contract Time*. Should 10 calendar days be insufficient to prepare the submission, the *Contractor* shall within 5 calendar days, advise the *Consultant* in writing of the proposed date of submission of the claim. Claims submitted after the dates prescribed herein will not be considered.

GC 6.2 CHANGE ORDER

- 6.2.1 Add after the last sentence in the paragraph:

The adjustment in the *Contract Time* and the *Contract Price* shall include an adjustment, if any, for delay or for the impact that the change in the *Work* has on the *Work* of the *Contractor*, and once such adjustment is made, the *Contractor* shall be precluded from making any further claims for delay or impact with respect to the change in the *Work*.

Add new paragraph 6.2.3 as follows:

- 6.2.3 The value of a change shall be determined in one or more of the following methods as directed by the *Consultant*.
 - .1 by estimate and acceptance of a lump sum;
 - .2 by negotiated unit prices which include the *Contractor's Overhead* and profit, or;

- .3 by the actual cost to the *Owner*, such costs to be the actual cost after all credits included in the change have been deducted, plus the following ranges of mark-up on such costs:
 - .1 *Contractor's* mark-up on its own work:
 - .1 Overhead and Profit: 10%
 - .2 *Contractor's* mark-up on Subcontractor's work:
 - .1 Overhead and Profit: 5%
 - .3 *Subcontractor's* mark-up on its own work:
 - .1 Overhead and Profit: 10%
 - .4 *Subcontractor's* mark-up on Subcontractors work:
 - .1 Overhead and Profit: 5%

Add new paragraph 6.2.4 as follows:

6.2.4 All quotations will be submitted in a complete manner listing:

- .1 quantity of each material,
- .2 unit cost of each material,
- .3 man hours involved,
- .4 cost per hour,
- .5 *Subcontractor* quotations submitted listing items 1 to 4 above and item 6 below.
- .6 mark-up

Add new paragraph 6.2.5 as follows:

6.2.5 The *Owner* and the *Consultant* will not be responsible for delays to the *Work* resulting from late, incomplete or inadequately broken down valuations submitted by the *Contractor*.

GC 6.3 CHANGE DIRECTIVE

6.3.2 Delete in its entirety.

6.3.3 Delete in its entirety.

6.3.6.1 Amend paragraph 6.3.6.1 by deleting the final period and adding as follows:

- .1 *Contractor's* mark-up on its own work:
 - .1 Overhead and Profit: 10%
- .2 *Contractor's* mark-up on Subcontractor's work:
 - .1 Overhead and Profit: 5%
- .3 *Subcontractor's* mark-up on its own work:
 - .1 Overhead and Profit: 10%
- .4 *Subcontractor's* mark-up on Subcontractors work:
 - .1 Overhead and Profit: 5%

6.3.7.1 In subparagraph 6.3.7.1 insert “while directly engaged in the work attributable to the change” after the words “in the direct employ of the *Contractor*”.

6.3.7 At the end of paragraph 6.3.7 add the following:

All other costs attributable to the change in the *Work* including the costs of all administrative or supervisory personnel are included in *Overhead* and profit calculated in accordance with the provisions of paragraph 6.1.5 of GC6.1 – OWNER’S RIGHT TO MAKE CHANGES.

6.3.11 Delete in its entirety.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

6.4.1 Delete paragraph 6.4.1 and replace with the following:

6.4.1.1 Prior to the submission of the bid on which the *Contract* was awarded, the *Contractor* confirms that it carefully investigated the *Place of the Work* and carried out such tests as it deemed appropriate and, in doing so, applied to that investigation the degree of care and skill required by paragraph 3.14.1.

6.4.1.2 No claim by the *Contractor* will be considered by the *Owner* or the *Consultant* in connection with conditions which could reasonably have been ascertained by such investigation or other due diligence undertaken prior to the execution of the *Contract*.

6.4.2 Amend paragraph 6.4.2 by adding a new first sentence as follows:

Having regard to paragraph 6.4.1, if the *Contractor* believes that the conditions of the *Place of the Work* differ materially from those reasonably anticipated, differ materially from those indicated in the *Contract Documents* or were concealed from discovery notwithstanding the conduct of the investigation described in paragraph 6.4.1, it shall provide the *Owner* and the *Consultant* with *Notice in Writing* no later than five (5) *Working Days* after the first observation of such conditions.

Amend the existing second sentence of paragraph 6.4.2 in the second line, following the word “materially” by adding the words “or were concealed from discovery notwithstanding the conduct of the investigation described in paragraph 6.4.1,”

6.4.3 Delete paragraph 6.4.3 in its entirety and substitute the following:

If the *Consultant* makes a finding pursuant to paragraph 6.4.2 that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* shall report in writing the reasons for this finding to the *Owner* and the *Contractor*.

Add new paragraph 6.4.5 as follows:

6.4.5 No claims for additional compensation or for an extension of *Contract Time* shall be allowed if the *Contractor* fails to give *Notice in Writing* to the *Owner* or *Consultant*, as required by paragraph 6.4.2.

GC 6.5 DELAYS

6.5.1 Delete the words after the word “for” in the fourth line of paragraph 6.5.1, and add the words “...reasonable direct costs directly flowing from the delay, but excluding any consequential, indirect or special damages (including, without limitation, loss of profits, loss of opportunity or loss of productivity).”

6.5.2 Add after the words “public authority” in the first line of paragraph 6.5.2. “...which is not a Force Majeure event...”. Delete the words after the word “for” in the fourth line of paragraph 6.5.2, and add the words “...reasonable direct costs directly flowing from the delay, but excluding any consequential, indirect or special damages (including, without limitation, loss of profits, loss of opportunity or loss of productivity).”

6.5.3 Delete paragraph 6.5.3 in its entirety and replace with the following:

If the *Contractor* is delayed in the performance of the *Work* by *Force Majeure*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as a result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from the actions of the *Owner*.

Delete paragraph 6.5.4 in its entirety and replace with the following:

6.5.4 No extension or compensation shall be made for delay or impact on the *Work* unless notice in writing of a claim is given to the *Consultant* not later than ten (10) *Working Days* after the commencement of the delays or impact on the *Work*, provided however, that, in the case of a continuing cause of delay or impact on the *Work*, only one notice of claim shall be necessary.

Add new paragraphs 6.5.6, 6.5.7 and 6.5.8 as follows:

- 6.5.6 If the *Contractor* is delayed in the performance of the *Work* by an act or omission of the *Contractor* or anyone directly or indirectly employed or engaged by the *Contractor*, or by any cause within the *Contractor's* control, then the *Contract Time* may be extended for such reasonable time as the *Owner* may decide in consultation with the *Consultant* and the *Contractor*. The *Owner* shall be reimbursed by the *Contractor* for all reasonable costs incurred by the *Owner* as the result of such delay, including, but not limited to, the cost of all additional services required by the *Owner* from the *Consultant* or any sub-consultants, project managers, or others employed or engaged by the *Owner*, and in particular, the costs of the *Consultant's* services during the period between the date of *Substantial Performance of the Work* stated in Article A-1 herein, as the same may be extended through the provision of these General Conditions, and any later or actual date of *Substantial Performance of the Work* achieved by the *Contractor*.
- 6.5.7 Without limiting the obligations of the *Contractor* described in GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS or GC 9.4 – CONSTRUCTION SAFETY, the *Owner* or *Consultant* may, by notice in writing, direct the *Contractor* to stop the *Work* where the *Owner* or *Consultant* determines that there is an imminent risk to the safety of persons or property at the *Place of the Work*. In the event that the *Contractor* receives such notice, it shall immediately stop the *Work* and secure the site. The *Contractor* shall not be entitled to an extension of the *Contract Time* or to an increase in the *Contract Price* unless the resulting delay, if any, would entitle the *Contractor* to an extension of the *Contact Time* or the reimbursement of the *Contractor's* costs as provided in paragraphs 6.5.1, 6.5.2 or 6.5.3.
- 6.5.8 No claim for delay shall be made and the *Contract Time* shall not be extended due to climatic conditions or arising from the *Contractor's* efforts to maintain the *Contract* schedule.

GC 6.6 CLAIMS FOR A CHANGE IN THE CONTRACT PRICE

Delete GC 6.6 in its entirety.

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

Revise the heading to read “**OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT**”

- 7.1.2 Add the following after substantial degree: “, or the Contractor fails to conform to any relevant federal, provincial, or municipal law, regulation, by-law or other requirement, including, without limitation, any applicable health and safety act or regulation,

Add a new subparagraph 7.1.3.4 as follows:

7.1.3.4 An “acceptable schedule” as referred to in subparagraph 7.1.3.2. means a schedule approved by the *Consultant* and the *Owner* wherein the default can be corrected within the balance of the *Contract Time* and shall not cause delay to any other aspect of the *Work* or the work of other contractors, and in no event shall it be deemed to give a right to extend the *Contract Time*.

7.1.4.1 Delete sentence and replace with the following:

Correct such default and deduct the cost, including *Owner's* expenses, thereof from any payment then or thereafter due the *Contractor*.

7.1.5.3 In subparagraph 7.1.5.3 delete the words: “however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference;”

Delete paragraph 7.1.6 in its entirety and add new paragraphs 7.1.6, 7.1.7, 7.1.8, 7.1.9 and 7.1.10 as follows:

7.1.6 In addition to its right to terminate the Contract set out herein, the *Owner* may terminate this *Contract* at any time for any other reason and without cause upon giving the *Contractor* fifteen (15) *Working Days' Notice in Writing* to that effect. In such event, the *Contractor* shall be entitled to be paid for all *Work* performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*, but in no event shall the *Contractor* be entitled to be compensated for any loss of profit on unperformed portions of the *Work*, or indirect, special, or consequential damages incurred.

7.1.7 The *Owner* may suspend *Work* under this *Contract* at any time for any reason and without cause upon giving the *Contractor Notice in Writing* to that effect. In such event, the *Contractor* shall be entitled to be paid for all *Work* performed to the date of suspension and be compensated for all actual costs incurred arising from the suspension, including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the suspension of the *Work*, but in no event shall the *Contractor* be entitled to be compensated for any indirect, special, or consequential damages incurred. In the event that the suspension continues for more than thirty (30) calendar days, the *Contract* shall be deemed to be terminated and the provisions of paragraph 7.1.6 shall apply.

7.1.8 In the case of either a termination of the *Contract* or a suspension of the *Work* under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK, OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall use its best commercial efforts to mitigate the financial consequences to the *Owner* arising out of the termination or suspension, as the case may be.

7.1.9 Upon the resumption of the *Work* following a suspension under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* will endeavour to minimize the delay and financial consequences arising out of the suspension.

7.1.10 The *Contractor's* obligations under the *Contract* as to quality, correction, and warranty of the *Work* performed by the *Contractor* up to the time of termination or suspension shall continue after such termination of the *Contract* or suspension of the *Work*.

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

7.2.2 Add after the words “public authority” in the second line of paragraph 7.2.2. “...which is not a Force Majeure event...”.

7.2.3.1 Delete subparagraph 7.2.3.1 in its entirety.

7.2.3.4 In subparagraph 7.2.3.4, delete the words "except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER".

Renumber paragraph 7.2.5 as paragraph 7.2.6. Add a new paragraph 7.2.5 as follows:

7.2.5 If the default cannot be corrected within the 5 *Working Days* specified in paragraph 7.2.4, the *Owner* shall be deemed to have cured the default if it:

- .1 commences correction of the default within the specified time;
- .2 provides the *Contractor* with an acceptable schedule for such correction; and,
- .3 completes the correction in accordance with such schedule.

Delete paragraph 7.2.6 entirely and replace with the following:

7.2.6 If the *Contractor* terminates the *Contract* under the conditions described in GC 7.2 – CONTRACTOR’S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall be entitled to be paid for all *Work* performed to the date of termination, as determined by the *Consultant*. The *Contractor* shall also be entitled to recover the direct costs associated with termination, including the costs of demobilization and losses sustained on *Products* and *Construction Equipment*. The *Contractor* shall not be entitled to any recovery for any special, indirect or consequential losses, including loss of profit.

Add new paragraphs 7.2.7, 7.2.8 and 7.2.9 as follows

7.2.7 The *Contractor* shall not be entitled to give notice of the *Owner*’s default or terminate the *Contract* in the event the *Owner* withholds certificates or payment or both in accordance with the *Contract* because of:

- (a) the *Contractor*’s failure to pay all legitimate claims promptly, or
- (b) the failure of the *Contractor* to discharge construction liens which are registered against the title to the *Place of the Work*.

7.2.8 The *Contractor*’s obligations under the *Contract* as to quality, correction and warranty of the *Work* performed by the *Contractor* up to the effective date of termination shall continue in force and shall survive termination by the *Contractor* in accordance with paragraph 7.2.4.

7.2.9 If the *Contractor* suspends the *Work* or terminates the *Contract* as provided for in GC 7.2 – CONTRACTOR’S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall ensure the site and the *Work* are left in a safe, secure condition as required by authorities having jurisdiction at the *Place of the Work* and the *Contract Documents*.

GC 8.1 AUTHORITY OF THE CONSULTANT

8.1.1 Add to line 3, prior to "findings", the words "interpretation and".

GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

8.2.1 Amend paragraph 8.2.1 by adding to the beginning “Except for those disputes enumerated in Paragraph 8.2.7 below”, and changing part of the second line from “shall appoint a *Project Mediator*” to “may appoint a *Project Mediator*, except that such an appointment shall only be made if both the *Owner* and the *Contractor* agree.”

8.2.4 Amend paragraph 8.2.4 by changing part of the second line from “the parties shall request the *Project Mediator*” to “and subject to paragraph 8.2.1 the parties may request the *Project Mediator*”.

Delete paragraphs 8.2.6, 8.2.7 and 8.2.8 in their entirety.

Add new paragraph 8.2.6 as follows:

8.2.6 The dispute may be finally resolved by arbitration under the Rules for Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing, provided that both the *Contractor* and the *Owner* agree. If the *Contractor* and the *Owner* agree to resolve the dispute by arbitration, the arbitration shall be conducted in the jurisdiction of the *Place of the Work*.

Add new paragraphs 8.2.7, 8.2.8, 8.2.9, 8.2.10, 8.2.11, 8.2.12, and 8.2.13 as follows:

8.2.7 Notwithstanding the foregoing, either the Contractor or the Owner may submit the following disputes to construction dispute interim adjudication (“Interim Adjudication”) as defined in Part II.1 of the Construction Act (Ontario) (the “Act”):

8.2.7.1 The valuation of services or materials provided under the Contract.

8.2.7.2 Payment under the Contract, including in respect of a Change Order, whether approved or not, or a Contemplated Change Order.

8.2.7.3 Disputes that are the subject of a notice of refusal to pay or non-payment under Part 5 hereof and/or Part I.1. (Prompt Payment) of the Act.

8.2.7.4 Amounts retained under section 12 (set-off by trustee) or under subsection 17 (3) (lien set-off) of the Act.

8.2.7.5 Payment of a holdback under section 26.1 (payment of holdback on annual basis) or 26.2 (payment of holdback on phased basis) of the Act.

8.2.7.6 Non-payment of holdback by the Board under section 27.1 of the Act.

8.2.7.7 Any other matter that the parties to the Interim Adjudication agree to in writing, or that may be prescribed by the Act.

8.2.8 An Interim Adjudication shall be conducted in accordance with the Act, the Regulations, and the following requirements:

[NTD: Board to consider including any other requirements.]

8.2.9 If the Owner or the Contractor (the “Initiating Party”) wish to refer a dispute to Interim Adjudication, it shall give to the other party (the “Responding Party”), the Consultant, and any other party required by the Act, written notice thereof, including the following:

8.2.9.1 the names and addresses of the parties;

8.2.9.2 the nature and a brief description of the dispute, including details respecting how and when it arose;

8.2.9.3 the nature of the redress sought; and

8.2.9.4 the name of a proposed adjudicator to conduct the Interim Adjudication.

8.2.10 The Responding Party who receives from the Initiating Party notice of the referral of a dispute to Interim Adjudication, shall respond in writing in accordance with the Act. The Responding Party shall either confirm that the proposed adjudicator is acceptable or propose an alternative adjudicator. If the parties cannot agree to a proposed adjudicator within five (5) days of the delivery of the initial notice of the referral of the dispute to Interim Adjudication, then the parties shall ask the Authority under the Act to appoint one.

8.2.11 The adjudicator agreed upon by the parties (the “**Adjudicator**”) shall have the following powers:

8.2.11.1 Issuing directions respecting the conduct of the Interim Adjudication.

- 8.2.11.2 Taking the initiative in ascertaining the relevant facts and law.
- 8.2.11.3 Drawing inferences based on the conduct of the parties to Interim Adjudication.
- 8.2.11.4 Conducting an on-site inspection of the Project.
- 8.2.11.5 Obtaining the assistance of a merchant, accountant, actuary, building contractor, architect, engineer or other person in such a way as the adjudicator considers fit, as is reasonably necessary to enable him or her to determine better any matter of fact in question.
- 8.2.11.6 Making a determination in the adjudication.
- 8.2.11.7 Any other power that may be prescribed.
- 8.2.12 If the Adjudicator requests an extension of the deadline for the Adjudicator's determination, the parties agree to grant the Adjudicator's request, provided that the deadline is not extended by more than fourteen days.
- 8.2.13 The parties agree that a determination by an Adjudicator shall be final and binding on each party and no party to an Interim Adjudication shall attempt to arbitrate, or otherwise contest, the determination under the provisions of Paragraphs 8.2.1 to 8.2.6 hereof, or through any other process, except in accordance with the Act.

GC 9.1 PROTECTION OF WORK AND PROPERTY

Delete subparagraph 9.1.1.1 in its entirety and substitute the following:

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

Delete paragraph 9.1.2 in its entirety and substitute as follows:

- 9.1.2 Before commencing any *Work*, the *Contractor* shall determine the locations of all underground or hidden utilities and structures indicated in or inferable from the *Contract Documents*, or that are inferable from an inspection of the *Place of the Work* exercising the degree of care and skill described in paragraph 3.14.1.

Add new paragraph 9.1.5 as follows:

- 9.1.5 With respect to any damage to which paragraphs 9.1.3 or 9.1.4 apply, the *Contractor* shall neither undertake to repair or replace any damage whatsoever to the work of other contractors, or to adjoining property, nor acknowledge that the same was caused or occasioned by the *Contractor*, without first consulting the *Owner* and receiving written instructions as to the course of action to be followed from either the *Owner* or the *Consultant*. Where, however, there is danger to life, the environment, or public safety, the *Contractor* shall take such emergency action as it deems necessary to remove the danger.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

Add a new subparagraph 9.2.5.5 as follows:

- 9.2.5.5 in addition to the steps described in subparagraph 9.2.5.3, take any further steps it deems necessary to mitigate or stabilize any conditions resulting from encountering toxic or hazardous substances or materials.
- 9.2.6 Add the following to paragraph 9.2.6, after the word "responsible" in the second line:

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

9.2.8 Add the following to paragraph 9.2.8, after the word “responsible” in the second line:

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

Add new paragraphs 9.2.10 and 9.2.11 as follows:

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

GC 9.4 CONSTRUCTION SAFETY

Delete paragraph 9.4.1 in its entirety and substitute as follows:

9.4.1 The *Contractor* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations, and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the *Work*.

Add new paragraphs 9.4.2 to 9.4.10 as follows:

9.4.2 Prior to the commencement of the *Work*, the *Contractor* shall submit to the *Owner*:

- .1 the evidence of workers’ compensation compliance required by GC 10.4.1;
- .2 copies of the *Contractor’s* insurance policies having application to the *Project* or certificates of insurance, at the option of the *Owner*;
- .3 documentation setting out the *Contractor’s* in-house safety programs;
- .4 copies of any documentation or notices to be filed or delivered to the authorities having jurisdiction for the regulation of occupational health and safety at the *Place of the Work*.

9.4.3 The *Contractor* shall indemnify and save harmless the *Owner*, its agents, trustees, officers, directors, employees, consultants, successors, appointees, and assigns from and against the consequences of any and all safety infractions committed by the *Contractor* under the occupational health and safety legislation in force at the *Place of the Work* including the payment of legal fees and disbursements on a substantial indemnity basis.

9.4.4 The *Owner* undertakes to include in its contracts with other contractors and in its instructions to its own forces the requirement that the other contractor or its own forces, as the case may be, comply with the policies and procedures of and the directions and instructions from the *Contractor* with respect to occupational health and safety and related matters.

- 9.4.5 If the *Owner* is of the reasonable opinion that the *Contractor* has not taken such precautions as are necessary to ensure compliance with the requirements of paragraph 9.4.1, the *Owner* may take any remedial measures which it deems necessary, including stopping the performance of all or any portion of the *Work*, and the *Owner* may use its employees, the *Contractor*, any *Subcontractor* or any other contractors to perform such remedial measures.
- 9.4.6 The *Contractor* shall file any notices or any similar document required pursuant to the *Contract* or the safety regulations in force at the *Place of the Work*. This duty of the *Contractor* will be considered to be included in the *Work* and no separate payment therefore will be made to the *Contractor*.
- 9.4.7 Unless otherwise provided in the *Contract Documents*, the *Contractor* shall develop, maintain and supervise for the duration of the *Work* a comprehensive safety program that will effectively incorporate and implement all required safety precautions. The program shall, at a minimum, respond fully to the applicable safety regulations and general construction practices for the safety of persons or property, including, without limitation, any general safety rules and regulations of the *Owner* and any workers' compensation or occupational health and safety statutes or regulations in force at the *Place of the Work*.
- 9.4.8 The *Contractor* shall provide a copy of the safety program described in paragraph 9.4.7 hereof to the *Consultant* for delivery to the *Owner* prior to the commencement of the *Work*, and shall, ensure, as far as it is reasonably practical to do so, that every employer and worker performing work in respect of the *Project* complies with such program.
- 9.4.9 The *Contractor* shall arrange regular safety meetings, and shall supply and maintain, at its own expense, at its office or other well-known place at the job site, safety equipment necessary to protect the workers and general public against accident or injury as prescribed by the authorities having jurisdiction at the *Place of the Work*, including, without limitation, articles necessary for administering first-aid to any person and an emergency procedure for the immediate removal of any injured person to a hospital or a doctor's care.
- 9.4.10 The *Contractor* shall promptly report in writing to the *Owner* and the *Consultant* all accidents of any sort arising out of or in connection with the performance of the *Work*, whether on or adjacent to the job site, giving full details and statement of witnesses. If death or serious injuries or damages are caused, the accident shall be promptly reported by the *Contractor* to the *Owner* and the *Consultant* by telephone or messenger in addition to any reporting required under the applicable safety regulations.

GC 10.1 TAXES AND DUTIES

- 10.1.2 Amend paragraph 10.1.2 by adding the following sentence to the end of the paragraph:

For greater certainty, the *Contractor* shall not be entitled to any mark-up for overhead or profit on any increase in such taxes and duties and the *Owner* shall not be entitled to any credit relating to mark-up for overhead or profit on any decrease in such taxes. The *Contractor* shall provide a detailed breakdown of additional taxes if requested by the *Owner* in a form satisfactory to the *Owner*.

Add new paragraph 10.1.3 as follows:

- 10.1.3 Where the *Owner* is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or *Value Added Taxes* applicable to the *Contract*, the *Contractor* shall, at the request of the *Owner*, assist with the application for any exemption, recovery or refund of all such taxes and duties and all amounts recovered or exemptions obtained shall be for the sole benefit of the *Owner*. The *Contractor* agrees to endorse over to the *Owner* any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this paragraph.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

10.2.2 Change "The *Owner*" to read "The *Contractor*", in the first line.

10.2.5 Amend paragraph 10.2.5 by addition the words "Subject to paragraph 3.4" at the beginning of the paragraph. Add the following to the end of the second sentence:

...and no further *Work* on the affected components of the *Contract* shall proceed until these directives have been obtained by the *Contractor* from the *Consultant*.

10.2.6 Amend paragraph 10.2.6 by adding the following sentence to the end of the paragraph:

In the event the *Owner* suffers loss or damage as a result of the *Contractor's* failure to comply with paragraph 10.2.5 and notwithstanding any limitations described in paragraph 12.1.1, the *Contractor* agrees to indemnify and to hold harmless the *Owner* and the *Consultant* from and against any claims, demands, losses, costs, damages, actions suits or proceedings resulting from such failure by the *Contractor*.

Add new paragraph 10.2.8 as follows:

10.2.8 The *Contractor* shall furnish all certificates that are required or given by the appropriate governmental authorities as evidence that the *Work* as installed conforms with the laws and regulations of authorities having jurisdiction, including certificates of compliance for the *Owner's* occupancy or partial occupancy. The certificates are to be final certificates giving complete clearance of the *Work*, in the event that such governmental authorities furnish such certificates.

GC 10.4 WORKERS' COMPENSATION

10.4.1 Delete paragraph 10.4.1 and replace with the following:

Prior to commencing the *Work*, and with each and every application for payment thereafter, including the *Contractor's* application for payment of the holdback amount following *Substantial Performance of the Work* and again with the *Contractor's* application for final payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation in force at the *Place of the Work*, including payments due thereunder.

GC 11.1 INSURANCE

Delete entirety of general condition and CCDC 41 and replace with the following:

11.1 Without restricting the generality of GC 12 – INDEMNIFICATION, the *Contractor* shall provide, maintain, and pay for the insurance coverage specified in GC 11.1 – INSURANCE. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the *Work* until the expiration of the warranty periods set out in the *Contract Documents*. Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.

.1 General Liability Insurance

General liability insurance shall be in the name of the *Contractor*, with the *Owner* and the *Consultant* named as additional insured, with limits of not less than \$5,000,000.00 inclusive per occurrence for bodily injury, death, and damage to property, including loss of use thereof, for itself and each of its employees, *Subcontractors* and/or

agents. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent replacement, provided that IBC Form 2100 shall contain the latest edition of the relevant CCDC endorsement form. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*. Where the *Contractor* maintains a single, blanket policy, the addition of the *Owner* and the *Consultant* is limited to liability arising out of the *Project* and all operations necessary or incidental thereto. The policy shall be endorsed to provide the *Owner* with not less than 30 days' notice, in writing, in advance of any cancellation and of change or amendment restricting coverage.

.2 Automobile Liability Insurance

Automobile liability insurance in respect of licensed vehicles shall limits of not less than \$2,000,000.00 inclusive per occurrence for bodily injury, death and damage to property, covering all licensed vehicles *owned* or leased by the *Contractor*, and endorsed to provide the *Owner* with not less than 30 days' notice, in writing, in advance of any cancellation, change or amendment restricting coverage. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.

.3 Property and Boiler and Machinery Insurance

(1) Builder's Risk property insurance shall be in the name of the *Contractor* with the *Owner* and the *Consultant* named as additional insured. The policy shall insure against all risks of direct physical loss or damage to the property insured which shall include all property included in the *Work*, whether owned by the *Contractor* or the owner or owned by others, so long as the property forms part of the *Work*. The property insured also includes all materials and supplies necessary to complete the work, whether installed in the work temporarily or permanently, in storage on the project site, or in transit to the project site, as well as temporary buildings, scaffolding, falsework forms, hoardings, excavation, site preparation and similar work. The insurance shall be for not less than the sum of the amount of the contract price and the full value of products that are specified to be provided by the owner for incorporation into the work, if applicable, with the deductible of \$10,000.00 payable by the contractor. The insurance shall include the foregoing and, otherwise, shall not be less than the insurance required by IBC Form 4042 or its equivalent replacement provided that the IBC Form 4042 shall include the latest addition of the relevant CCDC endorsement form. The coverage shall be based on a completed value form and shall be maintained continuously until ten (10) days after the date of the final certificate of payment.

(2) Boiler and machinery insurance shall be in the name of the *Contractor*, with the *Owner* and the *Consultant* named as additional insured, for not less than the replacement value of the boilers, pressure vessels and other insurable objects forming part of the *Work*. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 10 days after the date of the final certificate for payment.

(3) The policies shall allow for partial or total use or occupancy of the *Work*.

(4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of the *Contract Time*, relative to the extent of the loss or damage, as determined by the *Owner*, in its sole discretion.

(5) 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 as provided in GC 5.2 – APPLICATIONS FOR PROGRESS

PAYMENT and GC 5.3 – PROGRESS PAYMENT. In addition, the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*.

(6) In the case of loss or damage to the *Work* arising from the work of other contractors, or the *Owner's* own forces, the *Owner*, in accordance with the *Owner's* obligations under paragraph 3.2.2.4 of GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as provided in GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 – PROGRESS PAYMENT.

.4 Contractors' Equipment Insurance

"All risks" contractors' equipment insurance covering construction machinery and equipment used by the *Contractor* for the performance of the *Work*, excluding boiler insurance, 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' notice, in writing, in advance of cancellation, change or amendment restricting coverage. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance of his equipment, the *Owner* agrees to waive the equipment insurance requirement.

11.1.2 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 GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

11.1.3 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required to waive the course of construction insurance requirement.

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

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

GC 11.2 CONTRACT SECURITY

11.2.2 Delete paragraph after the word "provided" and replace with the following:

Such bonds shall be issued by an insurer licensed under the *Insurance Act* to write surety and fidelity insurance, which has been approved by the *Owner*, authorized to transact a business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfillment of the *Contract*, including all warranty and maintenance periods set out in the *Contract Documents*.

Add new paragraph 11.2.3 as follows:

11.2.3 It is the intention of the parties that the performance bond shall be applicable to all of the *Contractor's* obligations in the *Contract Document* and, wherever a performance bond is provided with language which conflicts with this intention, it shall be deemed to be amended to comply. The *Contractor* represents and warrants to the *Owner* that it has provided its surety with a copy of the *Contract Documents* prior to the issuance of such bonds.

11.2.4 Add new paragraph 11.2.4 as follows:

The *Contractor* shall provide a Performance Bond in the amount of at least 50% of the total of the *Contract Price* plus the *Value Added Taxes* and a Labour and Material Payment Bond in the amount of at least 50% of

the total of the *Contract Price* plus *Value Added Taxes*, which extends its protection to any *Subcontractors* supplying labour and materials to the *Work*, and guaranteeing the faithful performance of the *Contract*.

GC 12.1 INDEMNIFICATION

Delete General Condition 12.1 – INDEMNIFICATION in its entirety and substitute as follows:

- 12.1.1 The *Contractor* shall indemnify and hold harmless the *Owner*, its parent, subsidiaries and affiliates, their respective partners, trustees, officers, directors, agents and employees and the *Consultant* from and against any and all claims, liabilities, expenses, demands, losses, damages, actions, costs, suits, or proceedings (hereinafter called “claims”), whether in respect of claims suffered by the *Owner* or in respect of claims by third parties, that directly or indirectly arise out of, or are attributable to, the acts or omissions of the *Contractor*, its employees, agents, *Subcontractors*, *Suppliers* or any other persons for whom it is in law responsible (including, without limitation, claims that directly or indirectly arise out of, or are attributable to, loss of use or damage to the *Work*, the *Owner*’s property or equipment, the *Contractor*’s property or equipment or equipment or property adjacent to the *Place of the Work* or death or injury to the *Contractor*’s personnel).
- 12.1.2 The provisions of GC 12.1 - INDEMNIFICATION shall survive the termination of the *Contract*, howsoever caused and no payment or partial payment, no issuance of a final certificate of payment and no occupancy in whole or in part of the *Work* shall constitute a waiver or release of any of the provisions of GC 12.1.

GC 12.2 WAIVER OF CLAIMS

- 12.2.1 In the fourth line, add the words “claims for delay pursuant to GC 6.5 DELAYS” after the word “limitation”. Add the words “(collectively “Claims”)” after “*Substantial Performance of the Work*” in the sixth line.
- 12.2.1.1 Change the word “claims” to “Claims” and change the word “claim” to “Claim”.
- 12.2.1.2 Change the word “claims” to “Claims”.
- 12.2.1.3 Delete paragraph in its entirety.
- 12.2.1.4 Change the word “claims” to “Claims”.
- 12.2.2 Change the words “in paragraphs 12.2.1.2 and 12.2.1.3” to “in paragraph 12.2.1.2”. Change the word “claims” to “Claims” in both instances and change the word “claim” to “Claim”.
- 12.2.3 Delete paragraph in its entirety.
- 12.2.4 Delete paragraph in its entirety.
- 12.2.5 Delete paragraph in its entirety.
- 12.2.6 Change the word “claim” to “Claim” in all instances in the paragraph.
- 12.2.7 Change “The party” to “The *Contractor*”. Change the word “claim” to “Claim” in all instances in the paragraph.
- 12.2.8 Change “under paragraphs 12.2.1 or 12.2.3” to “under paragraph 12.2.1”. Change both instances of the words “the party” to “the *Contractor*”. Change the word “claim” to “Claim” in all instances in the paragraph.
- 12.2.9 Delete paragraph 12.2.9 in its entirety.
- 12.2.10 Delete paragraph 12.2.10 in its entirety.

GC 12.3 WARRANTY

- 12.3.2 Delete from the first line of paragraph 12.3.2 the word, “The” and substitute the words “Subject to paragraph 3.4.1, the...”

Add new paragraphs 12.3.7 to 12.3.12 as follows:

- 12.3.7 Where required by the *Contract Documents*, the *Contractor* shall provide a maintenance bond as security for the performance of the *Contractor’s* obligations as set out in GC 12.3 WARRANTY.
- 12.3.8 The *Contractor* shall provide fully and properly completed and signed copies of all warranties and guarantees required by the *Contract Documents*, containing:
- .1 the proper name of the *Owner*;
 - .2 the proper name and address of the *Project*;
 - .3 the date the warranty commences, which shall be at the “date of *Substantial Performance of the Work*” unless otherwise agreed upon by the *Consultant* in writing.
 - .4 a clear definition of what is being warranted and/or guaranteed as required by the *Contract Documents*;
- and
- .5 the signature and seal (if required by the governing law of the *Contract*) of the company issuing the warranty, countersigned by the *Contractor*.
- 12.3.9 Should any *Work* be repaired or replaced during the time period for which it is covered by the specified warranty, a new warranty shall be provided under the same conditions and for the same period as specified herein before. The new warranty shall commence at the completion of the repair or replacement.
- 12.3.10 The *Contractor* shall ensure that its *Subcontractors* are bound to the requirements of GC 12.3 – WARRANTY for the *Subcontractor’s* portion of the *Work*.
- 12.3.11 The *Contractor* shall ensure that all warranties, guarantees or other obligations for *Work*, services or *Products* performed or supplied by any *Subcontractor*, *Supplier* or other person in connection with the *Work* are obtained and available for the direct benefit of the *Owner*. In the alternative, the *Contractor* shall assign to the *Owner* all warranties, guarantees or other obligations for *Work*, services or *Products* performed or supplied by any *Subcontractor*, *Supplier* or other person in connection with the *Work* and such assignment shall be with the consent of the assigning party, where required by law, or by the terms of that party’s contract. Such assignment shall be in addition to, and shall in no way limit, the warranty rights of the *Owner* under the *Contract Documents*.
- 12.3.12 The *Contractor* shall commence or correct any deficiency within 2 Working Days after receiving a notice from the *Owner* or the *Consultant*, and shall complete the *Work* as expeditiously as possible, except in the case where the deficiency prevents maintaining security or where basic systems essential to the ongoing business of the *Owner* and/or its tenants cannot be maintained operational as designed. In those circumstances all necessary corrections and/or installations of temporary replacements shall be carried out immediately as an emergency service. Should the *Contractor* fail to provide this emergency service within 8 hours of a request being made during the normal business hours of the *Contractor*, the *Owner* is authorized, notwithstanding GC 3.1, to carry out all necessary repairs or replacements at the *Contractor’s* expense.

PART 13 OTHER PROVISIONS

Add new Part 13 OTHER PROVISIONS as follows:

GC 13.1 OWNERSHIP OF MATERIALS

- 13.1.1 Unless otherwise specified, all materials existing at the *Place of the Work* at the time of execution of the *Contract* shall remain the property of the *Owner*. All *Work* and *Products* delivered to the *Place of the Work* by the

Contractor shall be the property of the *Owner*. The *Contractor* shall remove all surplus or rejected materials as its property when notified in writing to do so by the *Consultant*.

GC 13.2 CONSTRUCTION LIENS

- 13.2.1 In the event that a claim for lien is registered against the *Project* by a *Subcontractor*, *Sub-subcontractor* or *Supplier*, and provided the *Owner* has paid all amounts properly owing under the *Contract*, the *Contractor* shall, at its own expense:
- .1 within 10 calendar days, ensure that any and all claims for lien and certificates of action are discharged, released, or vacated by the posting of security or otherwise; and
 - .2 in the case of written notices of lien, ensure that such notices are withdrawn, in writing.
- 13.2.2 In the event that the *Contractor* fails to conform with the requirements of paragraph 13.2.1, the *Owner* may fulfil those requirements without *Notice in Writing* to the *Contractor* and set off and deduct from any amount owing to the *Contractor*, all costs and associated expenses, including the costs of posting security and all legal fees and disbursements associated with discharging or vacating the claim for lien or certificate of action and defending the action. If there is no amount owing by the *Owner* to the *Contractor*, then the *Contractor* shall reimburse the *Owner* for all of the said costs and associated expenses.
- 13.2.3 Notwithstanding any other provision in the *Contract*, the *Consultant* shall not be obligated to issue a certificate and the *Owner* shall not be obligated to make payment to the *Contractor* if, at the time such certificate or payment was otherwise due:
- .1 a claim for lien has been registered against the *Project* lands, or
 - .2 if the *Owner* or mortgagee of the *Project* lands has received written notice of a lien, or
 - .3 the *Owner* or *Consultant* reasonably believe that any party has purported to retain title to *Products* or materials in respect of which an application for payment has been made.
- 13.2.4 Without limiting the foregoing, the *Contractor* shall, if requested by the *Owner*, defend, indemnify and save the *Owner* harmless from the amount of all such claims and the costs of defending any and all actions commenced against the *Owner* pursuant to the construction/builder's lien legislation in force at the *Place of the Work*, including the legal costs of the *Owner*, unless the lien was a direct result of a breach of the *Contract* by the *Owner* or the non-payment by the *Owner* of a valid charge or claim under the *Contract*.
- 13.2.5 GC 13.2 – CONSTRUCTION LIENS does not apply to construction/builder's liens claimed by the *Contractor*.

END OF AMENDMENTS TO CCDC 2 - 2008

GECDSB Privacy and Cyber Security Schedule (“Privacy Schedule”)

This Privacy Schedule forms part of the CCDC 2- 2008 Stipulated Price Contract (the “Contract”) dated [DATE] between Greater Essex County District School Board (the “Board”) and [insert name] (the “Contractor”) respecting the delivery of specified construction services (the “Services”) identified in the Contract.

Definitions

1. In this Schedule,
 - (a) **“Act”** means the *Municipal Freedom of Information and Protection of Privacy Act (MFIPPA)*, as amended from time to time;
 - (b) **“personal information”** means all verbal, written, or electronically transmitted and/or machine-reproduced information, documents, and/or recorded information about an identifiable individual, provided to or collected or created by Contractor as a result of the Contract with the Board;
 - (c) **“privacy breach”** shall mean the unauthorized collection, access, use or disclosure of personal information in a manner not permitted under the Contract or the Act and which compromises the security or privacy of such information.
 - (d) **“Schedule” or “Privacy Schedule”** shall mean this GECDSB Privacy and Cyber Security Schedule.
 - (e) **“in writing”** means direction, notification or information that is written either in paper form or in electronic form.

Purpose

2. The purpose of this Schedule is to:
 - (a) enable the Board to comply with its statutory obligations under the Act with respect to personal information; and
 - (b) ensure that, as a service provider, the Contractor securely collects, uses, discloses, stores, returns and destroys personal information provided by the Board in accordance with the Act.

Ownership

3. The Board shall own all personal information submitted to or created by the Contractor under this Schedule.
4. This Schedule shall not be construed to grant any interest to the Contractor in any personal information disclosed to it pursuant to this Schedule. The Contractor agrees that it shall not claim to have any rights, title or ownership in the personal information or any discoveries or inventions based on or derived from the personal information. Nothing contained herein shall be deemed or construed to create an agency relationship, partnership or joint venture between the Board and the Contractor. The Contractor acknowledges and agrees that any and all disclosures of personal information to it pursuant to this Schedule are on a non-exclusive basis and the Board is free to make similar or other disclosures to third parties. Further, nothing herein and nothing said or written in connection with the disclosure of the personal information constitutes a promise or undertaking to enter into further agreements.

Handling of personal information

5. Unless the Contract otherwise specifies or the Board otherwise directs in writing, the Contractor shall not directly or indirectly use, publish, make available, collect or disclose any personal information for any purposes not authorized in writing by the Board.
6. Unless the Contract otherwise specifies or the Board otherwise directs in writing, any access to or use of personal information that is not necessary for the performance of the Contractor’s contractual obligations with the Board is strictly prohibited.

7. Only those subcontractors, suppliers, agents, employees, or other persons performing any portion of the Services on the behalf of the Contractor and approved by the Board who require access to personal information (collectively, the “Agents”), on a need to know basis, to fulfill the Contractor’s obligations under the Contract or under this Schedule, shall have access to such information, provided that all such Agents shall have entered into a confidentiality agreement with the Contractor acknowledging that it or they are bound by the terms of this Schedule and are informed that the personal information is subject to the terms of this Schedule. Any breaches of the obligations of confidentiality contained in this Schedule by such Agents shall be treated as a breach of such obligations by the Contractor.
8. The Contractor shall not disclose any personal information to a third party unless authorized by the Board or compelled by law or court or court order. If the Contractor receives a request or order for access to personal information from a third party (the “Requester”), the Contractor must promptly advise the Requester to make the request to the Board . If the Contractor is legally compelled to disclose any personal information to a Requester, the Contractor must provide prompt notice to the Board before any disclosure to allow the Board to seek a protective order or other appropriate remedy to prevent or limit such disclosure, unless the Contractor is legally prohibited from doing so. The Contractor shall only disclose that portion of the personal information which the Contractor is legally compelled to disclose.
9. The obligations of confidentiality, non-disclosure and non-use hereunder shall indefinitely survive the expiration or sooner termination of this Schedule.

Subcontracting and Assignment

10. This Schedule shall not be assigned by the Contractor without the prior written consent of the Board. The transfer or issuance of shares of the Contractor sufficient to give control of the Contractor to anyone other than the present shareholder or shareholders shall, for the purpose of this Schedule, be deemed to be an assignment of this Schedule requiring the consent of the Board. The Contractor shall, at the request of the Board from time to time, provide the Board with a statutory declaration in a form satisfactory to the Board acting reasonably, wherein an officer of the Contractor discloses whether or not there has been any change in control of the Contractor.

Except as provided in this section, none of the rights or obligations hereunder shall be assignable or transferable by the Board without the prior written consent of Contractor. The Board shall be entitled, upon giving notice to Contractor, to assign this Schedule to another board of education (the “Permitted Assignee”), and upon such assignment and assumption of this Schedule by the Permitted Assignee and notice thereof being given to Contractor, the Board shall be relieved of any and all liability hereunder.

Storage

11. The Contractor shall store all personal information provided, collected or created under this Schedule only at its/its data host’s designated target servers located in [Insert Location]. The Contractor shall not process or transfer personal information to any portable or laptop computing device or any portable storage medium, unless that storage medium is in use as part of the Contractor’s designated backup and recovery processes and is encrypted.

In the event that the Contractor wishes to change its data host or the location of the servers hosting the personal information, the Contractor shall provide the Board sixty (60) days advance written notice of the proposed change. Should the Board not approve of the change, it shall notify the Contractor within thirty (30) days of its receipt of the Contractor’s notice. The Contractor shall then have ten (10) days to withdraw the change. If the Contractor fails or refuses to withdraw the change, the Board may immediately terminate this Schedule and any other contract between itself and the Contractor related thereto and, notwithstanding any term to the contrary in such contract, without

penalty, damages, costs or any other liability.

Security of personal information

12. The Contractor shall ensure the security and integrity of all personal information from and against all unauthorized collection, use, disclosure or destruction. The Contractor shall, in accordance with industry best practices, implement, use and maintain the most appropriate administrative, physical and technological security measures and procedures to fulfill its obligations with respect to ensuring the security and integrity of such personal information. These measures and procedures will be extended by contract to all Agents used by the Contractor.

Correction of personal information

13. The Contractor shall assist the Board in reviewing and/or correcting any personal information in the Contractor's custody or control.

Requests for access to personal information

14. If the Contractor receives a request for access to personal information from a person other than the Board, the Contractor must promptly advise the person to make the request to the Board unless the Contract expressly requires the Contractor to provide such access and, if the Board has advised the Contractor in writing of the name or title and contact information of an official of the Board to whom such requests are to be made, the Contractor must also promptly provide that official's name or title and contact information to the person making the request.

Return and Disposal of personal information

15. At the expiry or termination of the Contract, or at such time as the Board may direct, the Contractor must do any or all of the following with respect to personal information as required by the Board:
 - (a) transfer to the Board all personal information transferred to or collected, created, maintained, or stored by the Contractor or its Agents in relation to this Schedule in a reasonably accessible format and within sixty (60) days; and/or securely and permanently destroy all copies, records, reproductions and derivatives (including back ups) of personal information transferred to or collected, created, copied, reproduced, maintained, or stored by the Contractor in relation to this Schedule within sixty (60) days and provide written confirmation of the secure and permanent destruction to the Board within thirty (30) days of such destruction.
 - (b) The obligations of the Contractor in this paragraph 15 to return and/or dispose of personal information shall indefinitely survive the expiration or sooner termination of this Schedule.

Inspection of personal information

16. In addition to any other rights of inspection the Board may have under the Contract or under statute, the Board may, at any reasonable time and on reasonable written notice to the Contractor, enter on the Contractor's premises to inspect any personal information in the possession of the Contractor or any of the Contractor's information management policies or practices relevant to its management of personal information or its compliance with this Schedule and the Contractor must permit, and provide reasonable assistance to, any such inspection. The Contractor shall also provide the Board with copies of any third-party audits of the Contractor's information and security systems at reasonable intervals.
17. The provision of any personal information hereunder shall not constitute any representation, warranty, assurance, guarantee or inducement by the Board to the Contractor with respect to any personal information, which information is provided on an "as is" basis. No warranty as to the accuracy or completeness of any personal information is provided herein.

Compliance with the Act and directions

18. The Contractor must in relation to personal information comply with:
 - (a) the requirements of the Act applicable to the Contractor as a service provider, including any

- applicable order of the commissioner under the Act; and
- (b) any commercially reasonable direction given by the Board under this Schedule, and any expense incurred in connection with such direction shall be reimbursed to the Contractor by Board.

Notice of privacy breach

19. If there is a privacy breach, the Contractor must immediately notify the Board in writing of the particulars of the breach and what steps it has taken or proposes to take to address, or prevent recurrence of, the breach, and take all reasonable steps to assist the Board, in attempting to minimize any potential or actual damages or losses resulting from such unauthorized disclosure. Thereafter, the Contractor shall provide the Board with information concerning the breach as reasonably requested by the Board.

Insurance

20. For the duration of the Contract, the Contractor shall maintain network security and privacy liability insurance with third party coverage in an amount not less than \$1,000,000.00 CDN, in addition to any other insurance required by the Board in the Contract. The Contractor shall provide the Board with a certificate of insurance evidencing such coverage within thirty (30) days of a written request by the Board.

Indemnification

21. The Contractor shall indemnify and save harmless the Board from:
- (i) any third-party claims resulting from a privacy breach caused by an act or omission of the Contractor or its Agents;
 - (ii) any costs incurred by the Board in responding to a privacy breach caused by the Contractor or its Agents; and
 - (iii) any damages incurred by the Board as a result of the Contractor's or its Agent's breach of the terms of this Schedule.

Despite anything to contrary, the foregoing indemnifications shall not be subject to any limitations of liability specified in the Contract. This indemnity shall survive the expiration or sooner termination of this Schedule.

The Contractor acknowledges that, in the event of any breach of the provisions of this Schedule, the Board might not be fully or adequately compensated by recovery of damages alone. Accordingly, the Contractor agrees that, in addition to any other relief to which the Board may become entitled, the Board will be entitled to seek temporary and/or permanent injunctive relief, and the Contractor agrees not to interfere with the Board doing so.

Termination of Contract

22. In addition to any other rights of termination which the Board may have under the Contract or otherwise at law, the Board may terminate the Contract by giving notice in writing with immediate effect of such termination to the Contractor (i) upon any failure of the Contractor or its Agents to materially comply with this Schedule or (ii) in the event of a material privacy breach.

Contract Documents

23. In the event of any conflict or discrepancy between the provisions of: (1) GECDsB Privacy and Cyber Security Schedule ("Privacy Schedule") and (2) the Contract, the Contract shall govern the relationship between the Board and the Contractor.

SECTION 01 11 00

Summary of work

Part 1 General

1.1 Section includes

1. Documents and terminology.
2. Associated requirements.
3. Work expectations.
4. Premises usage.

1.2 Related requirements

1. Section 01 78 00 - Closeout Submittals.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Related documents

1. All other Division 01 specification sections.
2. Division 01 sections describe requirements applicable to all Sections within Divisions 02 to 49 inclusive.

1.4 Complementary documents

1. Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents which leave doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the Consultant.
2. Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.
3. Install components to physically conserve headroom, to minimize furring spaces, or obstructions.
4. Locate devices with primary regard for convenience of operation and usage.
5. Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of Consultant.

1.5 Description of the work

1. Work of this Contract comprises general construction of the CVIRS Upgrades at MD Bennie Public School and Harrow Public School, located at 259 Sherk Street in Leamington, Ontario and 400 Centre Street in Harrow, Ontario; and identified as Project No. 21018.
2. Division of the Work among Subcontractors is solely the Contractor's responsibility. Neither the Owner nor Consultant assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of work.

1.6 Contract method

1. Construct Work under single, stipulated price contract.

2. Relations and responsibilities are between the General Contractor and the Owner.
3. Provide the required liability insurance and bonds to ensure such specified assurances to the Owner.
4. Assigned Subcontractors are required to provide requested bonds covering faithful performance of subcontracted work, to the Owner plus payment of related obligations.
5. Refer to Section 01 21 00 for cash allowance amounts applicable to assignable contracts.
6. Contract Documents were prepared by the Consultant for the Owner. Any use which a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Owner accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.
7. For purposes of reference in these Contract Documents, the term "Contractor" shall mean the party in contract with the Owner.

1.7 Documents provided

1. Owner will supply the Contractor with six (6) sets of Contract Documents for construction purposes, which includes two (2) sets for record "as-built" purposes.
2. The Contractor may obtain additional sets of Contract Documents at the cost of printing, handling and shipping.
3. An electronic set of documents will be provided near the end of the Project for purposes of transferring changed information recorded on as-built documents to the electronic Record Documents.

1.8 Performance of the work

1. Substantial Performance of the Work is required for Owner occupancy before December 01, 2021.

1.9 Work sequence

1. Construct Work in to accommodate Owner's usage requirements during the construction period, coordinate construction schedule and operations with Owner.
2. Coordinate Progress Schedule and with Owner use during construction.

1.10 Work by owner

1. Owner will supply and install the following equipment and systems. Coordinate the installation of infrastructure, conduits, piping, junction boxes, and related items to be installed within the building under this contract to allow the Owner to properly install equipment and systems noted.
 - 1.1. Security System including cameras.
 - 1.2. Card Access - readers and control points - coordinate door hardware supply and installation with Owner.
 - 1.3. Telephone system.
 - 1.4. Information Technology (IT): data cabling, network equipment (other than the rack), server, wireless access points, switches, UPS, and CCTV server.
 - 1.4.1. Network Rack shall be supplied and installed under this contract refer to electrical drawings.

1.11 Owner-supplied products

1. Obtain the necessary Shop Drawings from the Contractors and proceed to coordinate details for installation, expedite, receive, unload, install, connect and test the specified equipment, and be responsible for warranty.

2. Receive Owner-supplied Products and equipment F.O.B. and store and process Products and equipment until installation.
3. Contractor Responsibilities:
 - 3.1. Designate submittals and delivery date for each Product in progress schedule.
 - 3.2. Review shop drawings, product data, samples, and other submittals. Submit to Consultant, notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - 3.3. Receive and unload Products at site.
 - 3.4. Inspect deliveries jointly with Owner; record shortages, and damaged or defective items.
 - 3.5. Handle Products at site, including uncrating and storage.
 - 3.6. Protect Products from damage, and from exposure to elements.
 - 3.7. Assemble, install, connect, adjust, and finish Products.
 - 3.8. Arrange for installation inspections required by public authorities.
 - 3.9. Repair or replace items damaged by Contractor or Subcontractor on site (under their control).
4. Schedule of Owner-supplied Products.
 - 4.1. Appliances: refrigerators, ranges, microwaves (common areas), and other items as designated on the drawings..

1.12 Contractor use of premises

1. Contractor has unrestricted use of site until Substantial Performance of the Work.

Ω End of Section

SECTION 01 14 00

Work restrictions

Part 1 General

1.1 Section includes

1. Connecting to existing services.
2. Special scheduling requirements.

1.2 Related requirements

1. Section 01 53 00 - Temporary Construction.
2. Section 01 33 00 - Submittal Procedures.
3. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Existing services

1. Notify Owner and utility companies of intended interruption of services and obtain required permission.
2. Where Work involves breaking into or connecting to existing services, give Owner, forty-eight (48) hours of notice for necessary interruption of mechanical or electrical service throughout course of work.
 - 2.1. Keep duration of interruptions minimum.
 - 2.2. Perform interruptions after normal working hours of occupants, preferably on weekends.
3. Provide for personnel pedestrian and vehicular traffic.
4. Construct barriers in accordance with Section 01 53 00.

1.4 Special requirements

1. Perform noise generating work:
 - 1.1. From Monday to Friday from 18:00 to 07:00 hours.
 - 1.2. On Saturdays, Sundays, and statutory holidays to Owner approval.
2. Submit schedule of special requirements or disruptions in accordance with Section 01 33 00.

Ω End of Section

SECTION 01 19 00

Specifications and documents

Part 1 General

1.1 Section includes

1. Words and terms.
2. Complementary documents.
3. Precedence of Documents.
4. Specification grammar.

1.2 Related documents

1. Document 00 52 10 - Agreement and Definitions: Precedence of documents.
2. Document 00 72 13 - General Conditions - Stipulated Price.
3. Section 01 11 00 – Summary of Work.
4. This section describes requirements applicable to all sections within Divisions 02 to 49.

1.3 Words and terms

1. Conform to definitions and their defined meanings in the Agreement and Definitions portion of City of Windsor Documents for supplementary words and terms.
2. The following words and terms are applicable to the Contract Documents for this project:
3. Addendum: A document that amends the Bid Documents during the Bidding Period and becomes part of the Contract Documents when a Contract is executed. (Plural: Addenda).
4. Agreement: The signed and sealed legal instrument binding parties in a Contract, describing in strict terms their mutual arrangement, roles and responsibilities, commencement, and completion responsibilities.
5. Alternative Price: The amount stipulated by a Bidder for an Alternative and stated as an addition, a deduction, or no change to the Bid Price.
6. Bid: To offer as a Bid stating for what price a Contractor will assume a Contract.
7. Bid Documents: A set of documents consisting of the Instructions to Bidders, Bid Form, Contract Documents, and other information issued for the benefit of Bidders to prepare and submit a Bid.
8. Bid Form: The specific and detailed form used to collect information about a Bid.
9. Bidding: The process of preparing and submitting a Bid.
10. Construction Documents: The Drawings and Project Manual. When combined with a Contract and Contract conditions, these documents form the Contract Documents.
11. Contingency Allowance: An additional monetary amount added to a Project cost estimate and designated to cover unpredictable or unforeseen items of Work. The amount is usually based on some percentage of the estimated cost and expended and adjusted by Change Order. It is not intended to cover additions to the scope of Work.
12. Cost Plus Contract: A Contract under which a Contractor is reimbursed for the direct and indirect costs for the performance of a Contract and, in addition, is paid a Fee for services. The Fee is usually stated as a stipulated price or as a percentage of cost.

13. General Conditions: That part of the Contract Documents which sets forth many of the rights, responsibilities and relationships of the parties involved in a Contract.
14. Instructions To Bidders: Instructions contained in the Bid Documents to convey an Owner's expectations and criteria associated with submitting a Bid.
15. Section: A portion of a Project Specification covering one or more segments of the total Work or requirements. Sections are included in a Project manual as required to meet Project requirements.
16. Standard: A document describing a grade or a level of quality, which has been established by a recognized agency or organization, utilizing an internal voting process.
17. Separate Price: A separate price for work to be added to the base price if selected by the Owner. This price type is not a part of the base bid price.
18. Stipulated Price: An amount set forth in a Stipulated Price Contract as the total payment for the performance of the Work. Sometimes referred to as a stipulated sum or a lump sum stipulated price.
19. Tender: A term that was formally abandoned by CCDC and the Canadian Construction industry in the early 1980's in favour of the preferred term Bid.
20. Unit Price: The amount payable for a single unit of Work as stated in a Schedule of Prices.
21. Install: To remove from site storage, move or transport to intended location, install in position, connect to utilities, repair site caused damage, and make ready for use.
22. Supply: To acquire or purchase, ship or transport to the site, unload, remove packaging to permit inspection for damage, re-package, replace damaged items, and safely store on-site.

1.4 Complementary documents

1. Generally, drawings indicate graphically, the dimensions and location of components and equipment. Specifications indicate specific components, assemblies, and identify quality.
2. Drawings, specifications, diagrams and schedules are complementary, each to the other, and what is required by one, to be binding as if required by all.
3. Should any conflict or discrepancy appear between documents, which leaves doubt as to the intent or meaning, apply the Precedence of Documents article below or obtain guidance or direction from Consultant.
4. Examine all discipline drawings, specifications, schedules, diagrams and related Work to ensure that Work can be satisfactorily executed.
5. All specification sections of the Project Manual and Drawings are affected by requirements of Division 01 sections.

1.5 Precedence of documents

1. In the event of conflict within and between the Contract Documents, the order of priority within specifications and drawings for this project are - from highest to lowest:
 - 1.1. the Agreement and Definitions between the Owner and the Contractor;
 - 1.2. the Definitions;
 - 1.3. Supplementary Conditions;
 - 1.4. the General Conditions;
 - 1.5. Sections of Division 01 of the specifications;
 - 1.6. Sections of Divisions 02 through 49 of the specifications.
 - 1.7. Schedules and Keynotes:
 - 1.7.1. Material and finishing schedules within the specifications, then;

- 1.7.2. Material and finishing schedules on drawings, then;
- 1.8. Diagrams.
- 1.9. Drawings:
 - 1.9.1. Drawings of larger scale shall govern over those of smaller scale of the same date, then;
 - 1.9.2. Dimensions shown on drawings shall govern over dimensions scaled from drawings, then;
 - 1.9.3. Location of utility outlets indicated on architectural detail drawings takes precedence over positions or mounting heights located on mechanical or electrical Drawings.
- 1.10. Later dated documents shall govern over earlier documents of the same type.
- 2. In the event of conflict between documents, the decision of the Consultant shall be final.

1.6 Specification grammar

- 1. Specifications are written in the imperative (command) mode, in an abbreviated form.
- 2. Imperative language of the technical sections is always directed to the Contractor identified as a primary constructor, as sole executor of the Contract, unless specifically noted otherwise.
 - 2.1. This form of imperative (command) mode statement requires the primary constructor to perform such action or Work.
 - 2.2. Perform all requirements of the Contract Documents whether stated imperatively or otherwise.
- 3. Division of the Work among subcontractors, suppliers, or others is solely the prime constructor's responsibility. The Consultant(s) and specification authors assume no responsibility to function or act as an arbiter to establish subcontract scope or limits between sections or divisions of Work.

Ω End of Section

PART 1 - GENERAL

1 General

1.1 INSTRUCTIONS

- .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 1.

1.2 SECTION INCLUDES

- .1 Cash allowances.
.2 Contingency allowance.

1.3 CASH ALLOWANCES

- .1 Refer to GC 4.1 Cash Allowances and CCDC Supplementary Conditions.
.2 Include in the Base Bid Price, cash allowances stated herein.
.3 Cash Allowances will not be subject to any Contractor markup. For greater certainty, the foregoing also applies when progress draws are made against cash allowances. The contract price, and not the cash allowances are to include the contractor's overhead and profit with any such cash allowances.
.4 The following cash allowances are to be included in the Stipulated Price Bid:

item	CASH ALLOWANCE BREAKDOWN	Value
1.0	Testing & Inspection Allowance - Harrow PS	\$2,500.00
2.0	Building permit – Harrow PS	\$2,500.00
3.0	Testing & Inspection Allowance - M.D. Bennie PS	\$2,500.00
4.0	Building permit - M.D. Bennie PS	\$2,500.00
	Total Cash Allowances	\$10,000.00

1.4 CONTINGENCY ALLOWANCE

- .1 The following contingency allowances are to be included in the Stipulated Price Bid:

item	CONTINGENCY ALLOWANCE BREAKDOWN	Value
1.0	Contingency Allowance - Harrow PS	\$25,000.00
2.0	Contingency Allowance – M.D. Bennie PS	\$25,000.00
	Total Contingency Allowances	\$50,000.00

***** End of Section *****

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SECTION 01 25 00

Substitution procedures

Part 1 General

1.1 Section includes

1. Substitutions.

1.2 Related requirements

1. Section 01 21 00 - Allowances.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Substitutions

1. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.
2. Consultant will consider requests for Substitutions only within fifteen (15) days after date of Owner-Contractor Agreement.
3. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
4. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
5. A request constitutes a representation that the Contractor:
 - 5.1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 5.2. Will provide the same warranty for the Substitution as for the specified Product.
 - 5.3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 5.4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5.5. Will reimburse Owner and Consultant for review or redesign services associated with re-approval by authorities.
6. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
7. Substitution Submittal Procedure:
 - 7.1. Submit three (3) copies of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.
 - 7.2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
 - 7.3. The Consultant will notify Contractor in writing of decision to accept or reject request.

Ω End of Section

SECTION 01 31 00

Project management and coordination

Part 1 General

1.1 Section includes

1. Coordination Work with other contractors and work by Owner under administration of General Contractor.
2. Scheduled progress meetings.

1.2 Related requirements

1. Section 01 32 00 - Construction Progress Documentation.
2. Section 01 33 00 - Submittal Procedures.
3. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Coordination

1. Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities and construction Work, with progress of Work of others, under instructions of Construction Manager.

1.4 Project meetings

1. Schedule and administer bi-weekly project meetings throughout progress of Work as determined by Consultant.
2. Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.
3. Prepare agenda for meetings.
4. Distribute written notice of each meeting four (4) days in advance of meeting date to Consultant and Owner.
5. Provide physical space and make arrangements for meetings.
6. Preside at meetings.
7. Record minutes. Include significant proceedings and decisions. Identify action by parties.
8. Reproduce and distribute copies of minutes within three (3) days after each meeting and transmit to meeting participants, affected parties not in attendance, Consultant, and Owner.

1.5 Construction organization and start-up

1. Within fifteen (15) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
2. Senior representatives of the Owner, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.
3. Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
4. Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
5. Agenda to include following:

- 5.1. Appointment of official representative of participants in Work.
- 5.2. Schedule of Work, progress scheduling as specified in Section 01 32 00.
- 5.3. Schedule of submission of shop drawings, samples, colour chips as specified in Section 01 33 00.
- 5.4. Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences as specified in Section 01 51 00.
- 5.5. Delivery schedule of specified equipment as specified in Section 01 32 00.
- 5.6. Site safety and security as specified in Section 01 35 29.
- 5.7. Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
- 5.8. Owner-furnished Products.
- 5.9. Record drawings as specified in Section 01 78 23.
- 5.10. Maintenance material and data as specified in Section 01 78 23.
- 5.11. Take-over procedures, acceptance, and warranties as specified Section 01 78 23.
- 5.12. Monthly progress claims, administrative procedures, photographs, and holdbacks.
- 5.13. Appointment of inspection and testing agencies or firms as specified in Section 01 45 00.
- 5.14. Insurances and transcript of policies.
6. During construction, coordinate use of site and facilities through Consultant's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.
7. Comply with instructions of Consultant for use of temporary utilities and construction facilities.
8. Coordinate field engineering and layout work with Consultant.

1.6 On-site documents

1. Maintain at job site, one copy each of the following:
 - 1.1. Contract drawings.
 - 1.2. Specifications.
 - 1.3. Addenda.
 - 1.4. Reviewed shop drawings.
 - 1.5. Change orders.
 - 1.6. Other modifications to Contract.
 - 1.7. Field test reports.
 - 1.8. Copy of approved Work schedule.
 - 1.9. Manufacturers' installation and application instructions.
 - 1.10. Applicable current editions of municipal regulations and by-laws. Current building codes, complete with addenda bulletins applicable to the Place of the Work.

1.7 Schedules

1. Submit preliminary construction progress schedule as specified in Section 01 32 00 to Consultant coordinated with Consultant's project schedule.
2. After review, revise and resubmit schedule to comply with revised project schedule.
3. During progress of Work revise and resubmit as directed by Consultant.

1.8 Construction progress meetings

1. During course of Work and 2 weeks prior to project completion, schedule progress meetings monthly.
2. Contractor, major subcontractors involved in Work Consultant and Owner are to be in attendance.
3. Notify parties minimum 5 days prior to meetings.
4. Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 days after meeting.
5. Agenda to include following:
 - 5.1. Review, approval of minutes of previous meeting.
 - 5.2. Review of Work progress since previous meeting.
 - 5.3. Field observations, problems, conflicts.
 - 5.4. Problems which impede construction schedule.
 - 5.5. Review of off-site fabrication delivery schedules.
 - 5.6. Corrective measures and procedures to regain projected schedule.
 - 5.7. Revision to construction schedule.
 - 5.8. Progress schedule, during succeeding work period.
 - 5.9. Review submittal schedules: expedite as required.
 - 5.10. Maintenance of quality standards.
 - 5.11. Review proposed changes for affect on construction schedule and on completion date.
 - 5.12. Review site safety and security issues.
 - 5.13. Other business.

1.9 Submittals

1. Submit preliminary Shop Drawings, product data and samples as specified in Section 01 33 00 for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to Consultant.
2. Submit requests for payment for review, and for transmittal to Consultant.
3. Submit requests for interpretation of Contract Documents, and obtain instructions through Consultant.
4. Process substitutions through Consultant.
5. Process change orders through Consultant.
6. Deliver closeout submittals for review and preliminary inspections, for transmittal to Consultant.

1.10 Closeout procedures

1. Notify Consultant when Work is considered ready for Substantial Performance.
2. Accompany Consultant on preliminary inspection to determine items listed for completion or correction.
3. Comply with Consultant's instructions for correction of items of Work listed in executed certificate of Substantial Performance and for access to Owner-occupied areas.
4. Notify Consultant of instructions for completion of items of Work determined in Consultant's final inspection.

Ω End of Section

SECTION 01 32 00

Construction progress documentation

Part 1 General

1.1 Section includes

1. Schedules, form, content, submission.
2. Critical path scheduling.
3. Submittals schedule.

1.2 Related requirements

1. Section 01 33 00 - Submittal Procedures.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Schedules

1. Submit schedules as follows:
 - 1.1. Submittal Schedule for Shop Drawings and Product Data.
 - 1.2. Submittal Schedule for Samples.
 - 1.3. Submittal Schedule for timeliness of Owner-furnished Products.
 - 1.4. Product Delivery Schedule.
 - 1.5. Cash Allowance Schedule for acquiring Products only or Products and Installation, or Installation only.
 - 1.6. Shutdown or closure activity.
2. Schedule Format.
 - 2.1. Prepare schedule in form of a horizontal GANTT bar chart.
 - 2.2. Provide a separate bar for each major item of work.
 - 2.3. Split horizontally for projected and actual performance.
 - 2.4. Provide horizontal time scale identifying first Working Day of each week.
 - 2.5. Format for listings: Chronological order of start of each item of work.
 - 2.6. Identification of listings: By systems description.
3. Schedule Submission.
 - 3.1. Submit initial format of schedules within fifteen (15) days after award of Contract.
 - 3.2. Submit schedules in electronic format, forward through project web site as *.pdf files.
 - 3.3. Submit one (1) opaque reproduction, plus two (2) copies to be retained by Consultant.
 - 3.4. Consultant will review schedule and return review copy within ten (10) days after receipt.
 - 3.5. Resubmit finalized schedule within seven (7) days after return of review copy.
 - 3.6. Submit revised progress schedule with each application for payment.
 - 3.7. Distribute copies of revised schedule to:
 - 3.7.1. Job site office.
 - 3.7.2. Subcontractors.

3.7.3. Other concerned parties.

3.8. Instruct recipients to report to Contractor within ten (10) days, any problems anticipated by timetable shown in schedule.

1.4 Construction progress scheduling

1. Submit initial schedule in duplicate within fifteen (15) days after date of Owner-Contractor Agreement.
2. Revise and resubmit as required.
3. Submit revised schedules with each Application for Payment, identifying changes since previous version.
4. Submit a computer generated chart with separate line for each major portion of Work or operation, identifying first work day of each week.
5. Submit computer generated network analysis diagram using the critical path method.
6. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
7. Indicate estimated percentage of completion for each item of Work at each submission.
8. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and required by Allowances.
9. Include dates for commencement and completion of each major element of construction as follows.
 - 9.1. Site clearing.
 - 9.2. Site utilities.
 - 9.3. Foundation Work.
 - 9.4. Structural framing.
 - 9.5. Special Subcontractor Work.
 - 9.6. Equipment Installations.
 - 9.7. Finishes.
10. Indicate projected percentage of completion of each item as of first day of month.
11. Indicate progress of each activity to date of submission schedule.
12. Indicate changes occurring since previous submission of schedule:
 - 12.1. Major changes in scope.
 - 12.2. Activities modified since previous submission.
 - 12.3. Revised projections of progress and completion.
 - 12.4. Other identifiable changes.

1.5 Submittals schedule

1. Include schedule for submitting Shop Drawings, product data, samples.
2. Indicate dates for submitting, review time, resubmission time, and last date for meeting fabrication schedule.
3. Include dates when delivery will be required for Owner-furnished products.
4. Include dates when reviewed submittals will be required from Consultant.

Ω End of Section

SECTION 01 33 00

Submittal procedures

Part 1 General

1.1 Section includes

1. Shop Drawings and product data.
2. Samples.

1.2 Related requirements

1. Section 01 32 00 - Construction Progress Documentation.
2. Section 01 78 00 - Closeout Submittals.
3. Other sections requesting submittals.
4. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Administrative

1. Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
2. Work affected by submittal shall not proceed until review is complete.
3. Present Shop Drawings, product data, samples and mock-ups in SI (metric) units.
4. Where items or information is not manufactured or produced in SI metric units, converted values within the metric measurement tolerances are acceptable.
5. Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.
6. Submittals not stamped, signed, dated, identified as to specific project, and attesting to their being reviewed will be returned without being examined and shall be considered rejected.
7. Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
8. Verify field measurements and affected adjacent Work are coordinated.
9. Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.
10. Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
11. Keep one (1) reviewed copy of each submission on site.

1.4 Shop drawings and product data

1. The term "Shop Drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

2. Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
3. Allow ten (10) days for Consultant's review of each submission.
4. Adjustments made on Shop Drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
5. Make changes in Shop Drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested.
6. Accompany submissions with duplicate transmittal letter, containing:
 - 6.1. Date.
 - 6.2. Project title and number.
 - 6.3. Contractor's name and address.
 - 6.4. Identification and quantity of each shop drawing, product data and sample.
 - 6.5. Other pertinent data.
7. Submissions shall include:
 - 7.1. Date and revision dates.
 - 7.2. Project title and number.
 - 7.3. Name and address of:
 - 7.3.1. Subcontractor.
 - 7.3.2. Supplier.
 - 7.3.3. Manufacturer.
 - 7.4. Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - 7.5. Details of appropriate portions of Work as applicable:
 - 7.5.1. Fabrication.
 - 7.5.2. Layout, showing dimensions, including identified field dimensions, and clearances.
 - 7.5.3. Setting or erection details.
 - 7.5.4. Capacities.
 - 7.5.5. Performance characteristics.
 - 7.5.6. Standards.
 - 7.5.7. Operating weight.
 - 7.5.8. Wiring diagrams.
 - 7.5.9. Single line and schematic diagrams.
 - 7.5.10. Relationship to other parts of the Work.
8. After Consultant's review, distribute copies.
9. Submit electronic copy of Shop Drawings for each requirement requested in specification Sections and as consultant may reasonably request.
10. Submit electronic copy of product data sheets or brochures for requirements requested in specification sections and as requested by Consultant where Shop Drawings will not be prepared due to standardized manufacture of product.

11. Delete information not applicable to project.
12. Supplement standard information to provide details applicable to project.
13. If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, electronic copy will be returned and fabrication and installation of Work may proceed. If Shop Drawings are rejected, noted copy will be returned and re-submission of corrected Shop Drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.5 Samples

1. Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
2. Deliver samples prepaid to Consultant's business address.
3. Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
4. Where colour, pattern or texture is criterion, submit full range of samples.
5. Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
6. Make changes in samples which Consultant may require, consistent with Contract Documents.
7. Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.6 Mock-ups

1. Erect mock-ups to Section 01 45 00.

Ω End of Section

SECTION 01 35 29

Health, safety, and emergency response procedures

Part 1 General

1.1 Section includes

1. Safety requirements and adherence.

1.2 Related requirements

1. Section 01 31 00 - Project Management and Coordination.

1.3 Reference standards

1. Province of Ontario: Occupational Health and Safety Act, Regulation and Code, including requirements for a "Prime Contractor" as defined by the Act.

1.4 Safety plan

1. Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
2. Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.5 Responsibility

1. The "Prime Contractor" according applicable local jurisdiction, is responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
2. Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
3. Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction. Advise Consultant verbally and in writing.

1.6 Submittals

1. Make submittals in accordance with Section 01 33 00.
2. Submit site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - 2.1. Results of site specific safety hazard assessment.
 - 2.2. Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
3. Submit electronic copies of Contractor's authorized representative's work site health and safety inspection reports to Owner, weekly.

4. Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
5. Submit copies of incident and accident reports.

1.7 Safety activities

1. Perform site specific safety hazard assessment related to project.
2. Schedule and administer Health and Safety meeting with Consultant prior to commencement of Work.
3. Perform Work in accordance with Section 01 41 00 - Regulatory Requirements and this section.

1.8 Health and safety coordinator

1. Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
 - 1.1. Have working knowledge of occupational safety and health regulations.
 - 1.2. Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - 1.3. Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - 1.4. Be on site during execution of Work, and report directly to and be under direction of site supervisor.

1.9 Posting of documents

1. Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Consultant.

1.10 Correction of non-compliance

1. Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.
2. Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.
3. Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.11 Hazardous work

1. Blasting or other use of explosives is not permitted without prior receipt of written instruction by Consultant.

1.12 Work stoppage

1. Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

1.13 Fire protection

1. Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction governing codes, regulations and bylaws.
2. Burning rubbish and construction waste materials is not permitted on site.

3. Maintain placed or installed fireproofing to protect the portions of the Work during construction.

Ω End of Section

SECTION 01 35 43

Environmental procedures

Part 1 General

1.1 Section includes

1. Site fires.
2. Pollution control.

1.2 Related requirements

1. Section 01 74 19 - Construction Waste Management and Disposal.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Fires

1. Fires and burning of rubbish on site not permitted.

1.4 Pollution control

1. Maintain temporary erosion and pollution control features installed under this contract.
2. Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

Ω End of Section

SECTION 01 41 00

Regulatory requirements

Part 1 General

1.1 Section includes

1. Discovery of hazardous materials.

1.2 Laws, notices, permits and fees

1. The laws of the Place of the Work shall govern the Work.
2. The Owner shall obtain and pay for the building permit, permanent easements and rights of servitude. The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work which were in force at the date of executing the Agreement.
3. Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to construction safety.
4. If the Contractor knowingly performs or allows work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes.
5. Determine detailed requirements of authorities having jurisdiction.
6. Pay construction damage deposits levied by municipality in connection with the issuance of a building permit.

1.3 Hazardous material discovery

1. Asbestos: If material resembling asbestos is encountered in course of demolition work, immediately stop work and notify Consultant.

1.4 Personnel smoking

1. Comply with regulatory and Owner imposed smoking restrictions during execution of the Work within or outside the premises.

Ω End of Section

SECTION 01 43 00

Quality assurance

Part 1 General

1.1 Section includes

1. Quality assurance criteria.

1.2 Related requirements

1. Section 01 45 00 - Quality Control.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Reference standards

1. AABC (Associated Air Balance Council): National Standards For Field Measurements and Instrumentation, Total Systems Balance, Air Distribution-Hydronics Systems.

1.4 Quality assurance

1. Provide testing organization services as specified in Section 01 45 00.
2. Testing organization: Current member in good standing of their respective professional or industry organization and certified to perform specified services.
3. Comply with applicable procedures and standards of the certification sponsoring association.
4. Perform services under direction of supervisor qualified under certification requirements of sponsoring association.
5. Qualifications:
 - 5.1. Provide adequate workforce training through meetings and demonstrations.
 - 5.2. Have someone on site with deconstruction experience throughout project for consultation and supervision purposes.

Ω End of Section

SECTION 01 45 00

Quality control

Part 1 General

1.1 Section includes

1. Inspection and testing, administrative and enforcement requirements.
2. Written and electronic reports.

1.2 Related requirements

1. Section 01 21 00 - Allowances.
2. Section 01 43 00 - Quality Assurance.
3. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Inspection by authority

1. Allow Authorities Having Jurisdiction access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
2. Give timely notice requesting inspection whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the Work.
3. If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

1.4 Review by consultant

1. Consultant may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.
2. If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.
3. If such Work is found in accordance with Contract Documents, Owner will pay cost of review and replacement.

1.5 Independent inspection agencies

1. Independent Inspection and Testing Agencies will be engaged by Owner for purpose of inspecting and testing portions of Work. Cost of such services will be borne by Owner.
2. Provide equipment required for executing inspection and testing by appointed agencies.
3. Employment of inspection and testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
4. If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant at no cost to Owner. Pay costs for retesting and re-inspection.

1.6 Access to work

1. Allow inspection and testing agencies access to Work, off site manufacturing and fabrication plants.

2. Cooperate to provide reasonable access and facilities for such access.

1.7 Procedures

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

1.8 Rejected work

1. Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
2. Make good other Contractor's work damaged by such removals or replacements promptly.
3. If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price the difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant.

1.9 Reports

1. Submit one (1) electronic copy of signed inspection and test reports to Consultant.

1.10 Equipment and systems

1. Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

Ω End of Section

SECTION 01 52 00

Construction facilities

Part 1 General

1.1 Section includes

1. Construction aids.
2. Office and sheds.
3. Parking.

1.2 Related requirements

1. Section 01 51 00 - Temporary Utilities.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Installation and removal

1. Provide construction facilities in order to execute work expeditiously.
2. Remove from site all such work after use.

1.4 Scaffolding

1. Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, and temporary stairs.

1.5 Hoisting

1. Provide, operate and maintain cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
2. Cranes shall be operated by qualified operator.

1.6 Use of the work

1. Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with Products.
2. Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.7 Construction parking

1. Consultants and contractors may park on site at their own risk.
2. Provide and maintain adequate access to project site.
3. If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

1.8 Security

1. Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.9 Equipment, tool and materials storage

1. Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
2. Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.10 Sanitary facilities

1. Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
2. Post notices and take such precautions as required by local health authorities.
3. Existing permanent facilities may not be used on within the school buildings.
4. Keep sanitary facilities clean and fully stocked with the necessary supplies at all times.

Ω End of Section

SECTION 01 53 00

Temporary construction

Part 1 General

1.1 Section includes

1. Site enclosure.
2. Guardrails and barriers.
3. Weather enclosures.
4. Dust tight barriers.
5. Protection for off-site and public property.
6. Protection of applied finishes.
7. Protection of surrounding Work.

1.2 Related requirements

1. Section 01 51 00 - Temporary Utilities.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Installation and removal

1. Provide temporary controls in order to execute Work expeditiously.
2. Remove from site all such work after use.

1.4 Site enclosure

1. Enclose/Secure construction areas with "fast-fence" type construction fencing.

1.5 Guard rails and barriers

1. Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

1.6 Weather enclosures

1. Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
2. Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
3. Design enclosures to withstand wind pressure and snow loading.

1.7 Dust tight barriers

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

1.8 Protection for off-site and public property

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

1.9 Protection of applied finishes

1. Provide protection for finished and partially finished surfaces and equipment during performance of Work.
2. Provide necessary screens, covers, and hoardings.
3. Confirm with Consultant locations and installation schedule three (3) days prior to installation.
4. Be responsible for damage incurred due to lack of or improper protection.

1.10 Protection of surrounding work

1. Provide protection for finished and partially finished Work from damage.
2. Provide necessary cover and protection.
3. Be responsible for damage incurred due to lack of or improper or inappropriate protection.

Ω End of Section

SECTION 01 61 00

Common product requirements

Part 1 General

1.1 Section includes

1. Product quality, availability, storage, handling, protection, and transportation.
2. Product substitution procedures.
3. Manufacturer's instructions.
4. Quality of Work, coordination and fastenings.

1.2 Related requirements

1. Section 01 42 00 - References: Other terms used in the Project Manual.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Terminology

1. New: Produced from new materials.
2. Defective: A condition determined exclusively by the Consultant.

1.4 Product quality

1. Products, materials, equipment, parts or assemblies (referred to as Products) incorporated in Work: New, not damaged or defective, of best quality (compatible with specification requirements) for purpose intended. If requested, provide evidence as to type, source and quality of Products provided.
2. Defective Products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
3. Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant.
4. Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
5. Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 Availability

1. Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items.
2. If delays in supply of Products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
3. In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available Products of similar character, at no increase in Contract Price or Contract Time.

1.6 Storage and protection

1. Store and protect Products in accordance with manufacturers' written instructions.
2. Store with seals and labels intact and legible.
3. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favourable to Product.
4. For exterior storage of fabricated Products, place on sloped supports above ground.
5. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
6. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
7. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
8. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.7 Transportation and handling

1. Transport and handle Products in accordance with manufacturer's written instructions.
2. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
3. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.8 Product changes

1. Change in Product/Products: Submit request for substitution or alternative in accordance with Section 01 25 00.

1.9 Manufacturer's written instructions

1. Unless otherwise indicated in specifications, install or erect Products to manufacturer's written instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
2. Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.
3. Improper installation or erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.10 Quality of work

1. Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
2. Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site any workers deemed incompetent or careless.
3. Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

1.11 Coordination

1. Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
2. Be responsible for coordination and placement of openings, sleeves and accessories.

1.12 Concealment

1. In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
2. Before installation, inform Consultant if there is interference. Install as directed by Consultant.

1.13 Remedial work

1. Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
2. Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.14 Location of fixtures

1. Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
2. Inform Consultant of conflicting installation. Install as directed.

1.15 Fastenings

1. Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
2. Prevent electrolytic action between dissimilar metals and materials.
3. Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
4. Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
5. Keep exposed fastenings to a minimum, space evenly and install neatly.
6. Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.16 Fastenings - equipment

1. Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
2. Use heavy hexagon heads, semi-finished unless otherwise specified. Use Type 304 or 316 stainless steel for exterior areas.
3. Bolts may not project more than one diameter beyond nuts.
4. Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.17 Protection of work in progress

1. Prevent overloading of any part of the Project.
2. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Consultant.

Ω End of Section

SECTION 01 71 00

Examination and preparation

Part 1 General

1.1 Section includes

1. Recording of subsurface conditions found.
2. Requirements and limitations for cutting and patching the Work.

1.2 Related requirements

1. Section 01 25 00 - Substitution Procedures.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Reference standards

1. Owner's identification of existing survey control points and property limits.

1.4 Submittals

1. Submit name and address of Surveyor to Consultant.
2. On request of Consultant, submit documentation to verify accuracy of field engineering work.
3. Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract Documents.

1.5 Qualifications of surveyor

1. Qualified registered land surveyor, licensed to practise in the Place of the Work, acceptable to Owner.

1.6 Examination

1. Inspect existing conditions, including elements or adjacent Work subject to irregularities, damage, movement, including Work during cutting and patching.
2. After uncovering, inspect conditions affecting performance of the Work.
3. Beginning of cutting or patching means acceptance of existing conditions.

1.7 Preparation

1. Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
2. Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.8 Existing services

1. Before commencing work, establish location and extent of service lines in area of Work and notify Consultant of findings.
2. Remove abandoned service lines within 2 m of structures. Cap or seal lines at cut-off points as directed by Consultant.

1.9 Location of equipment and fixtures

1. Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
2. Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
3. Inform Consultant of impending installation and obtain approval for actual location.
4. Submit field drawings to indicate relative position of various services and equipment when required by Consultant.

1.10 Survey record

1. Record locations of maintained, re-routed and abandoned service lines.
2. Upon the final completion of the entire project (all stages), allow and provide as-built topographical survey including site improvements and buildings. Provide two (2) true white prints signed and sealed by the registered Land Surveyor. Also include one (1) CD/DVD with an electronic version of the final as-built survey as an AutoCAD “.dwg” file (AutoCAD version 2018).

Ω End of Section

SECTION 01 73 00

Execution

Part 1 General

1.1 Section includes

1. Submittal requirements associated with connecting to new and existing facilities.
2. Execution requirements for all Work.

1.2 Related requirements

1. Section 01 71 00 - Examination and Preparation.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Submittals - attaching to existing work

1. Submit written request in advance of cutting or alteration which affects:
 - 1.1. Structural integrity of any element of Project.
 - 1.2. Integrity of weather-exposed or moisture-resistant elements.
 - 1.3. Efficiency, maintenance, or safety of any operational element.
 - 1.4. Visual qualities of sight-exposed elements.
2. Include in request:
 - 2.1. Identification of Project.
 - 2.2. Location and description of affected Work.
 - 2.3. Statement on necessity for cutting or alteration.
 - 2.4. Description of proposed Work, and products to be used.
 - 2.5. Alternatives to cutting and patching.
 - 2.6. Date and time work will be executed.

1.4 Tolerances

1. Monitor fabrication and installation tolerance control of Products to produce acceptable Work.
2. Do not permit tolerances to accumulate beyond effective or practical limits.
3. Comply with manufacturers' tolerances. In case of conflict between manufacturers' tolerances and Contract Documents, request clarification from Consultant before proceeding.
4. Adjust Products to appropriate dimensions; position and confirm tolerance acceptability, before permanently securing Products in place.

1.5 Execution

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

6. Remove samples of installed Work for testing, if not designated in the respective Section as remaining as part of the Work.
7. Provide openings in non-structural elements of Work for penetrations of associated Work. Limit opening dimensions to minimal sizes required, and performed in a neat and clean fashion.
8. Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
9. Employ qualified workers to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
10. Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry or concrete work without prior approval.
11. Restore work with new products in accordance with requirements of Contract Documents.
12. Fit Work reasonably close to opening size to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
13. At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, for full thickness of the constructed element.
14. Re-finish surfaces to match adjacent finishes: For continuous surfaces re-finish to nearest intersection; for an assembly, re-finish entire unit.
15. Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

Ω End of Section

SECTION 01 73 29

Cutting and patching

Part 1 General

1.1 Section includes

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

1.2 Related requirements

1. Section 01 11 00 - Summary of Work: Work by Owner.
2. Section 01 25 00 - Substitution Procedures: Product options and substitutions.
3. Section 01 32 00 - Construction Progress Documentation: Submittals and scheduling.
4. Section 01 61 00 - Common Product Requirements.
5. Section 07 84 00 - Firestopping.
6. Individual Product Specification Sections:
 - 6.1. Cutting and patching incidental to work of the section.
 - 6.2. Advance notification to other sections of openings required in Work of those sections.
 - 6.3. Limitations on cutting structural members.

1.3 Submittals

1. Submit written request in advance of cutting or alteration which affects:
 - 1.1. Structural integrity of any element of Project.
 - 1.2. Integrity of weather exposed or moisture resistant element.
 - 1.3. Efficiency, maintenance, or safety of any operational element.
 - 1.4. Visual qualities of sight exposed elements.
2. Include in request:
 - 2.1. Identification of Project.
 - 2.2. Location and description of affected Work.
 - 2.3. Necessity for cutting or alteration.
 - 2.4. Description of proposed Work and Products to be used.
 - 2.5. Alternatives to cutting and patching.
 - 2.6. Date and time work will be executed.

Part 2 Products

2.1 Materials

1. Primary Products: Those required for original installation.
2. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 25 00.

Part 3 Execution

3.1 Examination

1. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
2. After uncovering existing Work, assess conditions affecting performance of work.
3. Beginning of cutting or patching means acceptance of existing conditions.

3.2 Preparation

1. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
2. Provide protection from elements for areas which may be exposed by uncovering work.
3. Maintain excavations free of water.

3.3 Cutting

1. Execute cutting and fitting including excavation and fill to complete the Work.
2. Uncover work to install improperly sequenced work.
3. Remove and replace defective or non-conforming work.
4. Remove samples of installed work for testing when requested.
5. Provide openings in the Work for penetration of mechanical and electrical work.
6. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
7. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.4 Patching

1. Execute patching to complement adjacent Work.
2. Fit Products together to integrate with other Work.
3. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
4. Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
5. Restore work with new Products in accordance with requirements of Contract Documents.
6. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
7. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to Section 07 84 00, to full thickness of the penetrated element.
8. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

Ω End of Section

SECTION 01 74 10

Cleaning

Part 1 General

1.1 Section includes

1. Progressive cleaning.
2. Cleaning prior to acceptance.

1.2 Related requirements

1. Section 01 74 19 - Construction Waste Managing and Disposal.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

Part 2 Products

2.1 Cleaning materials

1. Cleaning Agents and Materials: Low VOC content.

Part 3 Execution

3.1 Progressive cleaning

1. Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
2. Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
3. Clear snow and ice from area of construction, bank or pile snow in designated areas only.
4. Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
5. Containers:
 - 5.1. Provide on-site steel framed, hinged lid containers for collection of waste materials and debris.
 - 5.2. Provide and use clearly marked, separate bins for recycling.
 - 5.3. Refer to Section 01 74 19.
6. Dispose of waste materials and debris off site.
7. Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
8. Store volatile waste in covered metal containers, and remove from premises at end of each working day.
9. Provide adequate ventilation during use of volatile or noxious substances. Use of enclosure ventilation systems is not permitted for this purpose.
10. Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
11. Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

3.2 Cleaning prior to acceptance

1. Prior to applying for Substantial Performance of the Work, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
2. Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
3. Prior to final review, remove surplus products, tools, construction machinery and equipment.
4. Remove waste products and debris including that caused by Owner or other Contractors.
5. Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
6. Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
7. Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
8. Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors.
9. Clean lighting reflectors, lenses, and other lighting surfaces.
10. Vacuum clean and dust building interiors, behind grilles, louvres and screens.
11. Clean and polish surface finishes, as recommended by manufacturer.
12. Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
13. Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
14. Remove dirt and other disfiguration from exterior surfaces.
15. Clean and sweep roofs, gutters, areaways, and sunken wells.
16. Sweep and wash clean paved areas.
17. Clean equipment and fixtures to a sanitary condition; replace filters of mechanical equipment.
18. Clean roof surfaces, down-spouts, and drainage components.
19. Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

3.3 Final product cleaning

1. Execute final cleaning prior to final project assessment. Refer to Section 01 74 10.
2. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
3. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
4. Replace filters of operating equipment.
5. Clean site; sweep paved areas, rake clean landscaped surfaces.
6. Remove waste and surplus materials, rubbish, and construction facilities from the site.

Ω End of Section

SECTION 01 75 16

Startup procedures

Part 1 General

1.1 Section includes

1. Starting equipment in preparation for adjusting and commissioning.
2. To bring the facility to a fully operational state, free of deficiencies, in the most efficient and timely manner achievable.
3. Contractor's and Owner's responsibilities during each of the following successive sub phases of facility start-up:
 - 3.1. Contractor start-up which leads to Interim Acceptance of the Work.
 - 3.2. Performance Testing which leads to Practical Completion of the Work.

1.2 Related requirements

1. Section 01 75 19 - Testing, Adjusting and Balancing.
2. Section 01 79 00 - Demonstration and Training.
3. Section 01 91 00 - Commissioning.
4. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Submissions

1. Provide a sample of manufacturer's start-up forms for equipment or systems not included.
2. Submit and completed and verified commissioning manual to the Owner with all data entered and sign-offs, prior to Substantial Completion of the Work.

Part 3 Execution

3.1 Starting systems

1. Coordinate schedule for start-up of various equipment and systems.
2. Notify Consultant, seven (7) days prior to start-up of each item.
3. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
4. Verify tests, metre readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
5. Verify that wiring and support components for equipment are complete and tested.
6. Execute start-up under supervision of applicable Contractors' personnel in accordance with manufacturers' written instructions.
7. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
8. Submit a written report in accordance with Section 01 33 00 that equipment or system has been properly installed and is functioning correctly.

3.2 Start-up report

1. Contractor to develop, complete and provide the report forms for all control points, software and hardware.
2. Include manufacturer's equipment start-up reports and test certificates as an appendix to the commissioning manual.
3. The commissioning manual will be kept on site for use by appropriate contractors and the commissioning agent.
 - 3.1. Maintain this manual current.
 - 3.2. Maintain a schedule for work of the commissioning agent in conjunction with the commissioning schedule.
4. The report forms are divided into three parts:
 - 4.1. Technical Data.
 - 4.2. Static Checks.
 - 4.3. Operational Checks.
5. Contractor is to complete each part prior to verification by the commissioning agent.
6. Contractor is responsible for completing the report forms as follows and as indicated on the attached sample:
 - 6.1. Technical Data.
 - 6.1.1. Specified: Commissioning Agent.
 - 6.1.2. Shop Drawing: Contractor.
 - 6.1.3. Installed: Contractor.
 - 6.1.4. Verified: Commissioning Agent.
 - 6.1.5. Date/Checked By: Contractor to sign when all shop drawing and installed information is completed.
 - 6.2. Static Checks.
 - 6.2.1. Confirmation of Completion: Contractor to confirm all items listed are completed prior to verification by the commissioning agent.
 - 6.2.2. Date / Checked By: Contractor to sign when the installation of the equipment and or systems are complete and ready for the commissioning agent to verify.
 - 6.3. Operational Checks.
 - 6.3.1. Operational checks will be performed by the commissioning agent using the balancing report and control's forms.

3.3 Contractor start up

1. Contractor to perform the following during start-up:
 - 1.1. Start equipment and systems.
 - 1.2. Test, adjust and balance equipment and systems as specified in Section 01 75 19.
 - 1.3. Demonstrate equipment and systems as specified in Section 01 79 00.
2. Complete and submit start-up reports including:
 - 2.1. Contractor's system and equipment start up reports.
 - 2.2. Manufacturers' equipment start up reports.

3. Review Contract Documents and inspect the Work to ensure completeness of the Work and compliance with requirements of Contract Documents.
4. Correct Contract deficiencies and defects identified as a result of the foregoing and as may be identified by the owner.
5. Execute and complete approved Change Orders.
6. Perform other work and activities required for fulfillment of prerequisites to Interim Acceptance of the Work.
7. Commissioning Agent will perform the following during start-up:
 - 7.1. Perform preliminary interim inspections as necessary.
 - 7.2. Witness manufacturers' equipment start-up.
 - 7.3. Verify starting, testing, adjusting and balancing by Contractor.
 - 7.4. Provide start-up reports for all systems and equipment and review and approve Contractor start-up reports.
 - 7.5. Cooperate in systems and equipment demonstration and instruction.
 - 7.6. Initiate Change Orders as required.
 - 7.7. Verify correction of Contract deficiencies and defects by Contractor.
 - 7.8. Verify execution of Change Orders performed by Contractor.
 - 7.9. Perform other activities related to Substantial Completion of the Work as specified in Section 01 91 00.
8. The following will be performed to an on-going cycle of:
 - 8.1. Owner's inspections.
 - 8.2. Documentation of results.
 - 8.3. Diagnosis of problems.
 - 8.4. Correction of Contract Deficiencies and execution of Change Orders as required.
 - 8.5. Verification of results.

3.4 Performance testing

1. Performance testing will be performed by the Commissioning Agent and:
 - 1.1. Completed prior to Substantial Completion.
 - 1.2. Completed when all systems have been balanced and tested and are operating to the satisfactory of the Commissioning Agent.
2. Contractor to perform the following during Performance Testing:
 - 2.1. Correct Contract deficiencies and defects previously outstanding and those identified during performance testing.
 - 2.2. Execute Change Orders.
3. The following will be performed to an on-going cycle of:
 - 3.1. Performance testing.
 - 3.2. Documentation of results.
 - 3.3. Diagnosis of problems.
 - 3.4. Correction of Contract deficiencies, defects and execution of Change Orders as required.
 - 3.5. Verification of results.

3.5 Seasonal constraints

1. Notwithstanding requirements in this section, additional separate cycles of Contractor start-up, performance testing and fine tuning may be necessitated at a later time on equipment and systems whose full operation is dependent on seasonal conditions.
2. Contractor's responsibilities with respect to later facility start-up activities are specified in this section.

3.6 Partial utilization of work

1. When partial utilization of the Work is required, the applicable requirements specified in this section apply to the part(s) of the Work to be utilized.

3.7 Third party testing

1. Third party independent testing will be carried out for the following prior to substantial completion.
2. Third party independent testing shall include the scope of testing as outlined in Section 01 21 00 - Allowances.
3. Cooperate with independent testing agencies to enable thorough and detailed testing of all systems and equipment.

Ω End of Section

SECTION 01 75 19

Testing, adjusting and balancing

Part 1 General

1.1 Section includes

1. Adjusting products and equipment required by all specifications sections for this Project.

1.2 Related requirements

1. Section 01 74 10 - Cleaning.
2. Section 01 75 16 - Startup Procedures.
3. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Purpose

1. Perform testing adjusting and balancing of operating systems in contract by an agency that will be selected by the Owner and consigned to this Contract:
2. Prior to start of balancing, ensure systems are:
 - 2.1. Piped, ducted, wired and wireless services and systems, including components and equipment forming part thereof.
 - 2.2. Manually and mechanically operated, including components and equipment forming any part.
 - 2.3. Testing, adjusting and balancing will not be started until after all static checks have been completed for the system being balanced and signed off on the commissioning report forms.
 - 2.4. Contractor to ensure systems are operated at designated times, under conditions required for proper testing, adjusting, and balancing.
 - 2.5. Report any deficiencies or defects which may effect the balancing or noted during testing, adjusting and balancing, which cannot be promptly corrected.
3. **Testing, adjusting and balancing specifications within Mechanical, Electrical, and Plumbing divisions take precedent over this specification.**

Part 2 Products

2.1 Not used

1. Not Used

Part 3 Execution

3.1 Preparation

1. Prepare each system and item of equipment for testing, adjusting and balancing.
2. Verify that each system and equipment installation is complete and in functional operation.
3. Verify appropriate ambient conditions.

3.2 Testing

1. Tests will be conducted to confirm compliance with requirements of Contract Documents. Take corrective action as necessary.

3.3 Adjusting

1. Adjust operating Products and equipment to ensure smooth and unhindered operation.
2. Provide equipment required to ensure proper, efficient and safe operation of all equipment including belts and sheaves.

3.4 Balancing

1. Cooperate with, and assist the balancing agent to ensure that the various parts of system are in a proper state of equilibrium.

Ω End of Section

SECTION 01 78 00

Closeout submittals

Part 1 General

1.1 Section includes

1. Inspections and declarations.
2. Closeout submittals.
3. Operation and maintenance manual format.
4. Contents each volume.
5. Recording actual site conditions.
6. Record (as-built) documents and samples.
7. Record documents.
8. Warranties and bonds.

1.2 Related requirements

1. Section 01 33 00 - Submittal Procedures.
2. Section 01 45 00 - Quality Control.
3. Section 01 79 00 - Demonstration and Training.
4. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Inspections and declarations

1. Contractor's Inspection: Construction Manager and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - 1.1. Notify Consultant in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - 1.2. Request Consultant's Inspection.
2. Consultant's Inspection: Consultant and Contractor will perform inspection of Work to identify defects or deficiencies. Correct defective and deficient Work accordingly.
3. Completion: Submit written certificate that following have been performed:
 - 3.1. Work has been completed and inspected for compliance with Contract Documents.
 - 3.2. Defects have been corrected and deficiencies have been completed.
 - 3.3. Equipment and systems have been tested, adjusted, balanced and are fully operational.
 - 3.4. Certificates required by authorities having jurisdiction have been submitted.
 - 3.5. Operation of systems have been demonstrated to Owner's personnel.
 - 3.6. Work is complete and ready for Final Inspection.
4. Final Inspection: When items noted above are completed, request final inspection of Work by Consultant, and Construction Manager. If Work is deemed incomplete by Consultant, complete outstanding items and request reinspection.

5. Declaration of Substantial Performance: When Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Substantial Performance of the Work.
6. Commencement of Warranty Periods: The date of Substantial Performance of the Work shall be the date for commencement of the warranty period.
7. Commencement of Lien Periods: The date of publication of the certificate of Substantial Performance of the Work shall be the date for commencement of the lien period, unless required otherwise by the lien legislation applicable at the Place of the Work.
8. Final Payment: When Consultant considers final deficiencies and defects have been corrected and it appears requirements of Contract have been completed, make application for final payment.
9. Payment of Hold-back: After issuance of certificate of Substantial Performance of the Work, submit an application for payment of hold-back amount.

1.4 Closeout submittals

1. Prepare instructions and data using personnel experienced in maintenance and operation of described products.
2. Copy will be returned after final inspection with Consultant's comments.
3. Revise content of documents as required prior to final submittal.
4. Two (2) weeks prior to Substantial Performance of the Work, submit to the Consultant, one (1) electronic final copies of operating and maintenance manuals in Canadian English.
5. Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
6. If requested, furnish evidence as to type, source and quality of products provided.
7. Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
8. Pay costs of transportation.

1.5 Operation and maintenance manual format

1. Organize data in the form of an instructional manual.
2. Binders: vinyl, hard covered, 3 'D' ring, loose leaf 8.5 x 11 inch with spine and face pockets.
3. When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
4. Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
5. Arrange content by systems under Section numbers and sequence of Table of Contents.
6. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
7. Text: Manufacturer's printed data, or typewritten data.
8. Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.6 Contents - each volume

1. Table of Contents: Provide:
 - 1.1. Title of project.

- 1.2. Date of submission.
- 1.3. Names, addresses, and telephone numbers of Consultant and Construction Manager with name of responsible parties.
- 1.4. Schedule of products and systems, indexed to content of volume.
2. For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
3. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00.
4. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
5. Certificate of Acceptance: Relevant certificates issued by authorities having jurisdiction, including code compliance certificate and life safety systems performance certificate.
6. Training: Refer to Section 01 79 00.

1.7 Recording actual site conditions

1. Record information on set of black line opaque drawings, and within the Project Manual, provided by
2. Annotate with coloured felt tip marking pens, maintaining separate colours for each major system, for recording changed information.
3. Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.
4. Contract drawings and Shop Drawings: legibly mark each item to record actual construction, including:
 - 4.1. Measured depths of elements of foundation in relation to finish first floor datum.
 - 4.2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 4.3. Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - 4.4. Field changes of dimension and detail.
 - 4.5. Changes made by change orders.
 - 4.6. Details not on original Contract Drawings.
 - 4.7. References to related shop drawings and modifications.
5. Specifications: legibly mark each item to record actual construction, including:
 - 5.1. Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - 5.2. Changes made by Addenda and change orders.
6. Other Documents: Maintain manufacturer's certifications, inspection certifications, and field test records required by individual specifications sections.

1.8 Record (as-built) documents and samples

1. In addition to requirements in General Conditions, maintain at the site for Consultant, one (1) record copy of:
 - 1.1. Contract Drawings.

- 1.2. Specifications.
- 1.3. Addenda.
- 1.4. Change Orders and other modifications to the Contract.
- 1.5. Reviewed shop drawings, product data, and samples.
- 1.6. Field test records.
- 1.7. Inspection certificates.
- 1.8. Manufacturer's certificates.
2. Store as-built documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
3. Label as-built documents and file in accordance with section number listings in List of Contents of the Project Manual. Label each document AS-BUILT DOCUMENTS in neat, large, printed letters.
4. Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.
5. Keep as-built documents and samples available for inspection by Consultant.

1.9 Record documents

1. Prior to Substantial Performance of the Work, electronically transfer the marked up information from the as-built documents to a master set of Drawing and specification files provided by the Consultant, as follows:
 - 1.1. Drawings: PDF.
 - 1.2. Specifications: PDF.
2. Mark revised documents as RECORD DOCUMENTS. Include all revisions, with special emphasis on underground conduits, piping for electrical and mechanical work.
3. Submit completed record documents to Consultant on a USB memory stick, accompanied by one (1) hard copy sets.

1.10 Final survey

1. Submit final site survey certificate in accordance with Section 01 71 00, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.
2. Inaccurate or neglectful information shall become a liability of the Contractor.

1.11 Warranties and bonds

1. Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
2. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
3. Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work.
4. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
5. Verify that documents are in proper form, contain full information, and are notarized.
6. Co-execute submittals when required.
7. Retain warranties and bonds until time specified for submittals.

Ω End of Section

SECTION 01 79 00

Demonstration and training

Part 1 General

1.1 Section includes

1. Procedures for demonstration and instruction of Products, equipment and systems to Owner's personnel.
2. Seminars and demonstrations.

1.2 Related requirements

1. Section 01 91 00 - Commissioning.
2. This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 Description

1. Demonstrate scheduled operation and maintenance of equipment and systems to Owner's personnel two (2) weeks prior to date of substantial performance.
2. Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

1.4 Component demonstration

1. Manufacturer to provide authorized representative to demonstrate operation of equipment and systems.
2. Instruct Owner's personnel, and provide written report that demonstration and instructions have been completed.

1.5 Submittals

1. Submit schedule of time and date for demonstration of each item of equipment and each system two (2) weeks prior to designated dates, for Consultant's approval.
2. Submit reports within one (1) week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
3. Give time and date of each demonstration, with list of persons present.

1.6 Conditions for demonstrations

1. Equipment has been inspected and put into operation in accordance with:
2. Testing, adjusting, and balancing have been performed in accordance with Section 01 91 00, and equipment and systems are fully operational.
3. Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

Part 2 Products

2.1 Not used

1. Not Used.

Part 3 Execution

3.1 Preparation

1. Verify that suitable conditions for demonstration and instructions are available.
2. Verify that designated personnel are present.
3. Prepare agendas and outlines.
4. Establish seminar organization.
5. Explain component design and operational philosophy and strategy.
6. Develop equipment presentations.
7. Present system demonstrations.
8. Accept and respond to seminar and demonstration questions with appropriate answers.

3.2 Preparation of agendas and outlines

1. Prepare agendas and outlines including the following:
 - 1.1. Equipment and systems to be included in seminar presentations.
 - 1.2. Name of companies and representatives presenting at seminars.
 - 1.3. Outline of each seminar's content.
 - 1.4. Time and date allocated to each system and item of equipment.
 - 1.5. Provide separate agenda for each system.

3.3 Seminar organization

1. Coordinate content and presentations for seminars.
2. Coordinate individual presentations and ensure representatives scheduled to present at seminars are in attendance.
3. Arrange for presentation leaders familiar with the design, operation, maintenance and troubleshooting of the equipment and systems. Where a single person is not familiar with all aspects of the equipment or system, arrange for specialists familiar with each aspect.
4. Coordinate proposed dates for seminars with Owner and select mutually agreeable dates.

3.4 Explanation of design strategy

1. Explain design philosophy of each system. Include following information:
 - 1.1. An overview of how system is intended to operate.
 - 1.2. Description of design parameters, constraints and operational requirements.
 - 1.3. Description of system operation strategies.
 - 1.4. Information to help in identifying and troubleshooting system problems.

3.5 Demonstration and instructions

1. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times, at the designated location.
2. Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.
3. Instruct personnel on control and maintenance of sensory equipment and operational equipment associated with maintaining energy efficiency and longevity of service.

4. Review contents of manual in detail to explain all aspects of operation and maintenance.
5. Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.

Ω End of Section

SECTION 02 40 00

Designated Substances Management Plan

Part 1 General

1.1 Section includes

1. Attached are copies of the following documents for reference in completing the work on this project.
 - 1.1. Designated Substances Management Plan for M.D. Bennie Public School 159 Sherk Street, Leamington, Ontario - Current Version February 11, 2020.
 - 1.2. Designated Substances Management Plan for Harrow Public School 400 Centre East, Harrow, Ontario - Current Version March 22, 2020.

Part 2 Products - Not Used

Part 3 Execution - Not Used

Ω End of Section

GREATER ESSEX COUNTY DISTRICT SCHOOL BOARD

Facility Services, 280 Eugenie St. E., Windsor, Ontario N8X 2X8, TEL: (519) 966-0034, Fax: (519) 969-1530



Designated Substances Management Plan

**Harrow PS
400 Centre East
Harrow, Ontario
N0R 1G0**

Original Survey Dated: August 30, 1995

Revision Dates: May 27, 1996, August 1, 2001, June 2003, August 7, 2004, January 2005, July 14, 2006, August 8, 2007, August 6, 2008, August 6, 2009, August 11, 2010, August 11, 2011, August 11, 2012, August 11, 2013, August 11, 2014, August 11, 2015, August 11, 2016, August 11, 2017, August 11, 2018, March 22, 2019

Current Version: March 22, 2020

Health & Safety Department

Executive Summary

The Greater Essex County District School Board (GECDSB) conducted an annual update for Designated Substances found in the building facility of Harrow Senior Public School. This notes the conditions and locations of observed, known and suspected Designated Substances found in accessible areas of the building. Asbestos (friable and non-friable ACMs), Lead, Silica, and Mercury are the four most common types of Designated Substances encountered at Board sites.

Other Designated Substances such as Arsenic, Benzene, Vinyl Chloride, Acrylonitrile, Coke Oven Emissions, Ethylene Oxide and Isocyanates are not likely to be found at a typical GECDSB site.

This annual update involved reviewing and documenting known abatements, repairs and conditional changes of known or suspected Designated Substances utilizing the work order system.

The following information provides a summary of where observed, known and suspected Designated Substances are located at this site.

Asbestos

Friable chrysotile asbestos (25-50%) is present in thermal insulation on pipe straights and fittings throughout the building. (i.e. domestic hot and cold water, hot water heating, rain water leaders) in various locations throughout. Friable asbestos (assumed) fire door cores are present throughout the building. Friable asbestos (assumed) heat shield is present inside ventilator units throughout the school. Friable asbestos (assumed) hard plaster materials are present on exterior overhangs in all areas with the exception of the FDK Addition. Non-friable chrysotile asbestos (1%) vinyl floor tiles 12 inches by 12 inches are present throughout. Non-friable asbestos (assumed) vinyl floor tiles 9 inches by 9 inches are present throughout. Non-friable amosite asbestos (1-5%) and chrysotile asbestos (1-4%). Non-friable asbestos (assumed) interior caulking is present throughout the building. Non-friable asbestos (assumed) chalkboards are present throughout the building. Non-

friable asbestos (assumed) gold mastic anti-sweat is present on the underside of sinks throughout the building. Non-friable asbestos (assumed) exterior caulking is present on windows and doors of the building in all areas with the exception of the FDK Addition. Non-friable asbestos (assumed) firestop materials are present on penetrations of the building in all areas with the exception of the FDK Addition. Non-friable asbestos (assumed) vermiculite is assumed to be present in exterior block wall cavities in all areas with the exception of the FDK Addition. These friable and non-friable ACMs were found to be in good physical condition (see tables and floor plans for more specifics).

Additional ACMs may exist in the above-noted non-accessible areas as well as in enclosed areas behind walls and ceilings or floor surfaces, which were not accessible without causing unplanned physical demolition/destruction.

Lead

The original building structure known as Harrow PS was built in 1965 and therefore all paints and varnishes are assumed to contain Lead.

Building additions and renovations were conducted in 1961 and 1970 and would also have paints and varnishes assumed to contain Lead.

In 2012 the Full Day Kindergarten ("FDK") building renovation / addition took place. Approximately 9 paint and varnish samples were taken in order to facilitate the 2012 FDK renovations. They were found to range from none detected up to 1500 PPM Lead. Any and all paints / varnishes utilized as part of the 2012 renovation / addition would fall under the 2010 Coatings Regulation which would be < 90 PPM Lead containing.

It should be noted that materials such as piping, machinery, equipment and batteries may also possibly contain Lead.

Silica

All concrete, bricks, masonry, terrazzo, mortar, ceramic floors, ceiling tiles, sand and like materials are assumed to contain Silica.

On occasion an Arts/Pottery class may take place in which they utilize Clay Body 700 which is 0.5% silica containing. This is temporary as such Clay Body 700 is brought in from a third party and removed after. No sanding is conducted and all such pottery work is done while wet/moist.

On occasion schools may wish to purchase sand for curriculum related activities. Such sand purchases are to be made through Webstock and the sand has to be Silica Free.

Mercury

Possible Mercury containing thermostats, thermometers, switches, batteries and fluorescent lamp tubes are assumed to contain Mercury.

Disclaimer

The information and opinions rendered in this report are exclusively for use by the above noted. Additional Designated Substances may exist at this site in non-accessible areas as well as in enclosed areas behind walls, ceilings or floor surfaces which were not accessible. The Health & Safety Department does not warrant nor represent that all Designated Substances have been identified in the building facility.

Tim Lauzon, I. H., E. P.,
Health & Safety Officer
GECD SB

2019 – 2020 School Year

ESSEX COUNTY BOARD OF EDUCATION

HARROW SENIOR PUBLIC SCHOOL

Asbestos Analysis

<u>Sample I.D.</u>	<u>Location</u>	<u>Condition</u>	<u>% asbestos and type</u>
HS1	Ceiling tile by room 24 in hall	good	n/a
HS2	Ceiling tile in open area	good	n/a
HS3	Elbow over ceiling tile by room 1	good	25-50% chrysotile
HS4	Ceiling concrete by room 24	good	n/a
HS5	Ceiling concrete by room 18	good	n/a
HS6	Pipe run in Principal's office next to ceiling	good	n/a

This school has roof top units.

Sample ID	Material and Location	% Asb & Type
HSP-01	12" x 12" Vinyl Floor Tiles, Stage	Non-ACM
HSP-02	Baseboard Mastic, Stage	Non-ACM



ANALYTICAL RESULTS

Date: 04-Jan-12

Client: INDOOR ENVIRONMENTAL SPECIALIST

Work Order: 11121365

Project: C1400

Lab ID: 11121365-001

Collection Date: 12/19/2011

Client Sample ID: HS-1 BEIGE-HALL

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	0.15	0.0097		wt%	1	12/30/2011 10:18:55 AM	RS

Lab ID: 11121365-002

Collection Date: 12/19/2011

Client Sample ID: HS-2 TAN-FRAMES

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	ND	0.010		wt%	1	12/30/2011 10:20:50 AM	RS

Lab ID: 11121365-003

Collection Date: 12/19/2011

Client Sample ID: HS-3 BLUE-LOCKERS

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	0.12	0.010		wt%	1	12/30/2011 10:22:49 AM	RS

Lab ID: 11121365-004

Collection Date: 12/19/2011

Client Sample ID: HS-4 YELLOW LOCKERS

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	ND	0.040		wt%	1	12/30/2011 10:29:23 AM	RS

Qualifiers: ND - Not Detected at the Reporting Limit (RL).
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
T - Tentatively Identified Compound (TIC)



ANALYTICAL RESULTS

Date: 04-Jan-12

Client: INDOOR ENVIRONMENTAL SPECIALIST

Work Order: 11121365

Project: C1400

Lab ID: 11121365-005

Collection Date: 12/19/2011

Client Sample ID: HS-5 TAN-INT

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	0.083	0.0098		wt%	1	12/30/2011 10:31:17 AM	RS

Lab ID: 11121365-006

Collection Date: 12/19/2011

Client Sample ID: HS-6 GREEN-LOCKERS

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	ND	0.026		wt%	1	12/30/2011 10:33:08 AM	RS

Lab ID: 11121365-007

Collection Date: 12/19/2011

Client Sample ID: HS-7 BEIGE WALL

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	ND	0.0097		wt%	1	12/30/2011 10:35:00 AM	RS

Lab ID: 11121365-008

Collection Date: 12/19/2011

Client Sample ID: HS-8 GREEN-DOOR

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	0.026	0.010		wt%	1	12/30/2011 10:52:01 AM	RS

Qualifiers: ND - Not Detected at the Reporting Limit (RL).

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

T - Tentatively Identified Compound (TIC)



ANALYTICAL RESULTS

Date: 04-Jan-12

Client: INDOOR ENVIRONMENTAL SPECIALIST

Work Order: 11121365

Project: C1400

Lab ID: 11121365-009

Collection Date: 12/19/2011

Client Sample ID: HS-9 BLACK LOCKER

Matrix: PAINT CHIP

Analyses	Result	Reporting Limit	Qual	Units	DF	Date Analyzed	Analyst
EPA 3050B/ 6010C, PAINT CHIPS							
Lead	ND	0.0093		wt%	1	12/30/2011 10:53:54 AM	RS

Qualifiers: ND - Not Detected at the Reporting Limit (RL).
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
T - Tentatively Identified Compound (TIC)

Certificate of Analysis

Indoor Environmental Specialists Inc.

330 Richmond Street Unit 101
Chatham, ON N7M 1P5
Attn: Chris Croft

Client PO: C3551
Project: C3551
Custody:

Report Date: 18-Mar-2019
Order Date: 14-Mar-2019

Order #: 1911419

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1911419-01	2018-0001C - Plaster
1911419-02	2018-0001D - Plaster
1911419-03	2018-0001E - Plaster
1911419-04	2018-0001F - Plaster
1911419-05	2018-0001G - Plaster
1911419-06	2018-0002A - 12x12 Tan VFT w/Long Brown Streaks
1911419-07	2018-0002B - 12x12 Tan VFT w/Long Brown Streaks
1911419-08	2018-0002C - 12x12 Tan VFT w/Long Brown Streaks
1911419-09	2018-0003B - ACT w/Lg Divots and Med and Few Lg Pinholes
1911419-10	2018-0003C - ACT w/Lg Divots and Med and Few Lg Pinholes
1911419-11	2018-0004A - ACT w/Thin Med Width Fissures w/Sm Pinholes
1911419-12	2018-0004B - ACT w/Thin Med Width Fissures w/Sm Pinholes
1911419-13	2018-0004C - ACT w/Thin Med Width Fissures w/Sm Pinholes
1911419-14	2018-0005A - ACT Small Random Fissures w/Sm Pinholes
1911419-15	2018-0005B - ACT Small Random Fissures w/Sm Pinholes
1911419-16	2018-0005C - ACT Small Random Fissures w/Sm Pinholes
1911419-17	2018-0006A - 12x12 Tan VFT w/Dark Grey Streaks
1911419-18	2018-0006B - 12x12 Tan VFT w/Dark Grey Streaks
1911419-19	2018-0006C - 12x12 Tan VFT w/Dark Grey Streaks
1911419-20	2018-0007B - Baseboard Mastic
1911419-21	2018-0007C - Baseboard Mastic
1911419-22	2018-0008A - 12x12 Olive Green VFT Cream and White Streaks
1911419-23	2018-0008B - 12x12 Olive Green VFT Cream and White Streaks
1911419-24	2018-0008C - 12x12 Olive Green VFT Cream and White Streaks
1911419-25	2018-0009A - 12x12 Grey VFT w/White Streaks
1911419-26	2018-0009B - 12x12 Grey VFT w/White Streaks

Approved By:



Emma Diaz
Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Client: Indoor Environmental Specialists Inc.

Client PO: C3551

Report Date: 18-Mar-2019

Order Date: 14-Mar-2019

Project Description: C3551

1911419-27	2018-0009C - 12x12 Grey VFT w/White Streaks
1911419-28	2018-0010A - 12x12 Salmon VFT w/Black and White Streaks
1911419-29	2018-0010B - 12x12 Salmon VFT w/Black and White Streaks
1911419-30	2018-0010C - 12x12 Salmon VFT w/Black and White Streaks

Certificate of Analysis

Client: Indoor Environmental Specialists Inc.

Client PO: C3551

Report Date: 18-Mar-2019

Order Date: 14-Mar-2019

Project Description: C3551

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1911419-01	12-Mar-19	Grey	Plaster	No	Client ID: 2018-0001C - Plaster	
					Non-Fibers	100
1911419-02	12-Mar-19	Grey/White	Plaster	No	Client ID: 2018-0001D - Plaster	
					Non-Fibers	100
1911419-03	12-Mar-19	Grey	Plaster	No	Client ID: 2018-0001E - Plaster	
					Non-Fibers	100
1911419-04	12-Mar-19	Grey/White	Plaster	No	Client ID: 2018-0001F - Plaster	
					Non-Fibers	100
1911419-05	12-Mar-19	Grey/Brown	Plaster	No	Client ID: 2018-0001G - Plaster	
					Cellulose	10
					Non-Fibers	90
1911419-06	12-Mar-19	Beige/Black	Vinyl Floor Tile/Mastic	Yes	Client ID: 2018-0002A - 12x12 Tan VFT w/Long Brown Streaks	
					Chrysotile	1
					Non-Fibers	99
1911419-07	12-Mar-19				Client ID: 2018-0002B - 12x12 Tan VFT w/Long Brown Streaks	
					not analyzed	
1911419-08	12-Mar-19				Client ID: 2018-0002C - 12x12 Tan VFT w/Long Brown Streaks	
					not analyzed	
1911419-09	12-Mar-19	White	Ceiling Tile	Yes	Client ID: 2018-0003B - ACT w/Lg Divots and Med and Few Lg Pinholes	
					Amosite	5
					Chrysotile	1
					Cellulose	5
					MMVF	70
					Non-Fibers	19
1911419-10	12-Mar-19				Client ID: 2018-0003C - ACT w/Lg Divots and Med and Few Lg Pinholes	
					not analyzed	

Certificate of Analysis
Client: Indoor Environmental Specialists Inc.
Client PO: C3551

Report Date: 18-Mar-2019
Order Date: 14-Mar-2019
Project Description: C3551

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1911419-11	12-Mar-19	White	Ceiling Tile	Yes	Client ID: 2018-0004A - ACT w/Thin Med Width Fissures w/Sm Pinholes	
					Amosite	1
					Chrysotile	4
					Cellulose	5
					MMVF	70
					Non-Fibers	20
1911419-12	12-Mar-19				Client ID: 2018-0004B - ACT w/Thin Med Width Fissures w/Sm Pinholes	
					not analyzed	
1911419-13	12-Mar-19				Client ID: 2018-0004C - ACT w/Thin Med Width Fissures w/Sm Pinholes	
					not analyzed	
1911419-14	12-Mar-19	Beige	Ceiling Tile	No	Client ID: 2018-0005A - ACT Small Random Fissures w/Sm Pinholes	
					Cellulose	30
					MMVF	30
					Non-Fibers	20
					Other fibers	20
1911419-15	12-Mar-19	Beige	Ceiling Tile	No	Client ID: 2018-0005B - ACT Small Random Fissures w/Sm Pinholes	
					Cellulose	30
					MMVF	30
					Non-Fibers	20
					Other fibers	20
1911419-16	12-Mar-19	Beige	Ceiling Tile	No	Client ID: 2018-0005C - ACT Small Random Fissures w/Sm Pinholes	
					Cellulose	30
					MMVF	30
					Non-Fibers	20
					Other fibers	20
1911419-17	12-Mar-19	Tan/Black	Vinyl Floor Tile/Mastic	Yes	Client ID: 2018-0006A - 12x12 Tan VFT w/Dark Grey Streaks	
					Chrysotile	1
					Non-Fibers	99

Certificate of Analysis
Client: Indoor Environmental Specialists Inc.
Client PO: C3551

Report Date: 18-Mar-2019
Order Date: 14-Mar-2019
Project Description: C3551

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1911419-18	12-Mar-19				Client ID: 2018-0006B - 12x12 Tan VFT w/Dark Grey Streaks not analyzed	
1911419-19	12-Mar-19				Client ID: 2018-0006C - 12x12 Tan VFT w/Dark Grey Streaks not analyzed	
1911419-20	12-Mar-19	Brown	Baseboard Mastic	No	Client ID: 2018-0007B - Baseboard Mastic Non-Fibers	100
1911419-21	12-Mar-19	Brown	Baseboard Mastic	No	Client ID: 2018-0007C - Baseboard Mastic Non-Fibers	100
1911419-22	12-Mar-19	Olive/Black	Vinyl Floor Tile/Mastic	Yes	Client ID: 2018-0008A - 12x12 Olive Green VFT Cream and White Streaks Chrysotile Non-Fibers	[ASLYR] 1 99
1911419-23	12-Mar-19				Client ID: 2018-0008B - 12x12 Olive Green VFT Cream and White Streaks not analyzed	
1911419-24	12-Mar-19				Client ID: 2018-0008C - 12x12 Olive Green VFT Cream and White Streaks not analyzed	
1911419-25	12-Mar-19	Grey/Brown	Vinyl Floor Tile/Mastic	Yes	Client ID: 2018-0009A - 12x12 Grey VFT w/White Streaks Chrysotile Non-Fibers	[ASLYR] 1 99
1911419-26	12-Mar-19				Client ID: 2018-0009B - 12x12 Grey VFT w/White Streaks not analyzed	
1911419-27	12-Mar-19				Client ID: 2018-0009C - 12x12 Grey VFT w/White Streaks not analyzed	
1911419-28	12-Mar-19	Salmon/Black	Vinyl Floor Tile/Mastic	Yes	Client ID: 2018-0010A - 12x12 Salmon VFT w/Black and White Streaks Chrysotile Non-Fibers	[ASLYR] 1 99

Certificate of Analysis
Client: Indoor Environmental Specialists Inc.
Client PO: C3551

Report Date: 18-Mar-2019
Order Date: 14-Mar-2019
Project Description: C3551

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1911419-29	12-Mar-19				Client ID: 2018-0010B - 12x12 Salmon VFT w/Black and White Streaks	
					not analyzed	
1911419-30	12-Mar-19				Client ID: 2018-0010C - 12x12 Salmon VFT w/Black and White Streaks	
					not analyzed	

* MMVF: Man Made Vitreous Fibers: Fiberglass, Mineral Wool, Rockwool, Glasswool

** Analytes in bold indicate asbestos mineral content.

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	1 - Mississauga	200863-0	14-Mar-19

* Reference to the NVLAP term does not permit the user of this report to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Qualifier Notes

Sample Qualifiers :

ASLYR: Layers were noted for this sample, however, the entire sample was homogenized per client request.

Z-01: Sample appears to be drywall

Work Order Revisions | Comments

None

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Gym 1st Floor Level	Thermal Insulation Large Pipe Straights									Non-ACM	Fibreglass Insulation
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Thermal Insulation Large Pipe Fittings	VHS-03								25-50% CHR	Abated November 30, 2012
Stage 1st Floor Level	Baseboard Mastic									Non-ACM	No Access Under Stage
	Ceiling Tiles	V2018-0004	X				X		No	1% AMO 4% CHR	
	Ceiling Tiles									Non-ACM	New Material Observed 2018 in Stairwells
	Vinyl Floor Tiles 12" x 12"	SHSP-01								Non-ACM	New 12" x 12" Flooring Observed 2018
S9 1st Floor Level	Baseboard Mastic	VHSP-02								Non-ACM	Not Observed 2018
	Plaster	V2018-0001								Non-ACM	
	Vinyl Floor Tiles 12" x 12"	V2018-0002	X			X			No	1% CHR	
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	Not Observed 2018
	Plaster Ceiling	VHS-04								Non-ACM	No Access Above
S7 1st Floor Level	Baseboard Mastic	VHSP-02								Non-ACM	
	Vinyl Floor Tiles 12" x 12"	V2018-0002	X						No	1% CHR	
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	Not Observed 2018
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Designated Substance Management Plan - TABLE # 2

Last Revised: March 22, 2020

Building Name: Harrow Public School

Location	Material Examined	Sample Number	Condition			Accessability	Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible Rarely Accessible Not Accessible			
S5 1st Floor Level	Baseboard Mastic	V2018-0007						Non-ACM	
	Vinyl Floor Tiles 12" x 12"	V2018-0002	X			X	No	1% CHR	
	Plaster	V2018-0001						Non-ACM	
D1 / D2 1st Floor Level	Plaster Ceiling	VHS-04						Non-ACM	No Access Above
	Baseboard Mastic	VHSP-02						Non-ACM	Not Observed 2018
	Vinyl Floor Tiles 12" x 12"	VHSP-01						Non-ACM	Not Observed 2018
S6 1st Floor Level	Ceiling Tiles	VHS-01						Non-ACM	Not Observed 2018
	Plaster	V2018-0001						Non-ACM	
	Thermal Insulation Duct Coverings							Non-ACM	Fibreglass Insulation
	Baseboard Mastic	VHSP-02						Non-ACM	
	Baseboard Mastic	S2018-0007C						Non-ACM	
	Vinyl Floor Tiles 12" x 12"	S2018-0008C	X			X	No	1% CHR	
	Vinyl Floor Tiles 12" x 12"	VHSP-01						Non-ACM	Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 13 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
	Ceiling Tiles	V2018-0004	X				X		No	1% AMO 4% CHR	
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Flooring 2001
	Baseboard Mastic	VHSP-02								Non-ACM	
Classroom 12 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
	Ceiling Tiles	S2018-0004C	X				X		No	1% AMO 4% CHR	
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Flooring 2001
	Baseboard Mastic	VHSP-02								Non-ACM	
	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
Classroom 14 1st Floor Level	Ceiling Tiles	V2018-0004	X				X		No	1% AMO 4% CHR	
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Flooring 2001
	Baseboard Mastic	VHSP-02								Non-ACM	
	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'Y' (e.g. Y0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 15 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		New Material Observed 2018
	Ceiling Tiles	V2018-0004	X				X		1% AMO 4% CHR	No	
	Gold Mastic on Sink		X			X			Assumed	No	Assumed Asbestos
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Flooring 2001
H5 1st Floor Level	Baseboard Mastic	VHSP-02							Non-ACM		
	Ceiling Tiles	SHS-01							Non-ACM		
	Plaster Ceiling	SHS-04							Non-ACM		Not Observed 2018
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos Repaired June 2004
	Thermal Insulation Piping & Ducting								Non-ACM		Fibreglass Insulation
H4 (CLRM 15-12) 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos Various Doors
	Baseboard Mastic	VHSP-02							Non-ACM		
	Thermal Insulation Piping & Ducting								Non-ACM		Fibreglass Insulation
	Ceiling Tiles	VHS-01							Non-ACM		No Access Above
Library 26 1st Floor Level	Fire Door								Assumed		Assumed Asbestos Abated
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Material
	Baseboard Mastic	VHSP-02							Non-ACM		

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
S8 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Baseboard Mastic	S2018-00078							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	S2018-0006A	X			X			1% CHR	No	
	Vinyl Floor Tiles 12" x 12"	VHSP-01							Non-ACM		Not Observed 2018
	Ceiling Tiles	VHS-01	X					X	Non-ACM		New Material Observed 2018
	Fire Door								Assumed	Yes	Assumed Asbestos
	Upper Ceiling Tiles	VHS-02							Non-ACM		No Access Above
Music Classroom 24 1st Floor Level	Thermal Insulation Pipe Straights								Non-ACM		Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03							25-50% CHR		Under Sink Not Observed 2018 Fibreglass Insulation
	Baseboard Mastic	VHSP-02							Non-ACM		
	Chalkboard		X			X			Assumed	No	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"								Assumed		Beneath Carpet Abated October 23, 2014
	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Ceiling Tiles	V2018-0004	X				X		1% AMO 4% CHR	No	New Material Observed 2018
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"	S2018-0002C	X			X			1% CHR	No	
LST Room 1st Floor Level	Vinyl Floor Tiles 12" x 12"	VHSP-01							Non-ACM		Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
S10 1st Floor Level	Plaster	V2018-0001								Non-ACM	
	Vinyl Floor Tiles 12" x 12"	S2018-0002B	X			X			No	1% CHR	
	Baseboard Mastic	V2018-0007								Non-ACM	
	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
Classroom 18B 1st Floor Level	Baseboard Mastic	VHSP-02								Non-ACM	
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Upper Plaster Ceiling	VHS-05								Non-ACM	No Access Above
	Plaster	S2018-0001D								Non-ACM	
Storage Room in CR18B 1st Floor Level	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	New Material Observed 2018
	Plaster	V2018-0001								Non-ACM	
	Vinyl Floor Tiles 12" x 12"	S2018-0002A	X			X			No	1% CHR	
	Baseboard Mastic	V2018-0007								Non-ACM	
Custodial Room 3 1st Floor Level	Plaster	V2018-0001								Non-ACM	No Access Above
	Baseboard Mastic	V2018-0007								Non-ACM	
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Storage Room 512 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	VHSP-01							Non-ACM		Not Observed 2018
S14 1st Floor Level (No Longer Present)	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos
	Ceiling Tiles	VHS-01							Non-ACM		New Material Observed 2018
Classroom 23 1st Floor Level	Upper Ceiling Tiles	VHS-02							Non-ACM		No Access Above
	Upper Plaster Ceiling	S2018-0001C							Non-ACM		No Access Above
	Thermal Insulation Pipe Straights								Non-ACM		Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03	X			X			25-50% CHR	Yes	Under Sink Repaired Summer 2004
	Gold Mastic on Sink		X			X			Assumed	No	Assumed Asbestos
	Chalkboard		X			X			Assumed	No	Assumed Asbestos
	Ventilator Unit		X					X	Assumed	Yes	Assumed Asbestos
	Interior Caulking		X			X			Assumed	No	Assumed Asbestos
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 18A 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	
	Upper Plaster Ceiling	VHS-04								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								25-50% CHR	Under Sink Abated Summer 2004
	Baseboard Mastic	VHSP-02								Non-ACM	
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	
	Ceiling Tiles	VHS-01								Non-ACM	
Classroom 19 1st Floor Level	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03	X			X			Yes	25-50% CHR	Under Sink
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Chalkboard		X			X			No	Assumed	Assumed Asbestos
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Baseboard Mastic	VHSP-02								Non-ACM	
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 20 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Straights & Fittings	VHS-03	X			X			Yes	25-50% CHR	Under Sink
	Baseboard Mastic	VHSP-02								Non-ACM	
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Chalkboard		X			X			No	Assumed	Assumed Asbestos
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
Classroom 21 1st Floor Level	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos
	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Straights & Fittings	VHS-03	X			X			Yes	25-50% CHR	Under Sink
	Baseboard Mastic	VHSP-02								Non-ACM	
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Chalkboard		X			X			No	Assumed	Assumed Asbestos
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Designated Substance Management Plan - TABLE # 10

Last Revised: March 22, 2020

Building Name: Harrow Public School

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 22 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		New Material Observed 2018
	Upper Ceiling Tiles	VHS-02							Non-ACM		No Access Above
	Thermal Insulation Pipe Straights								Non-ACM		Fibreglass Insulation
	Thermal Insulation Pipe Straights & Fittings	VHS-03	X			X			25-50% CHR	Yes	Under Sink
	Baseboard Mastic	VHSP-02							Non-ACM		
	Gold Mastic on Sink		X			X			Assumed	No	Assumed Asbestos
	Chalkboard		X			X			Assumed	No	Assumed Asbestos
	Ventilator Unit		X					X	Assumed	Yes	Assumed Asbestos
	Interior Caulking		X			X			Assumed	No	Assumed Asbestos
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
HG / H7 1st Floor Level	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos
	Ceiling Tiles	VHS-01							Non-ACM		
	Ceiling Tiles	S2018-0003B	X				X		5% AMO 1% CHR	No	
	Ceiling Tiles	S2018-0004A	X				X		1% AMO 4% CHR	No	
	Ceiling Tiles	S2018-0005A-C							Non-ACM		
	Plaster	V2018-0001							Non-ACM		
	Plaster Ceiling	SHS-05							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos Repaired June 2004
	Thermal Insulation Pipe Straights								Non-ACM		Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03	X				X		25-50% CHR	Yes	Partially Abated 2003 ACM Fittings Remain

Samples analyzed are identified by the prefix 'S' (e.g. S0001)

Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
OF8 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Abated October 23, 2014 New 12" x 12" Flooring
OF7 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		No Access Above New Material Observed 2018
	Ceiling Tiles	V2018-0003	X				X		5% AMO 1% CHR	No	
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03							25-50% CHR		Under Sink Not Observed 2018 Fibreglass Insulation
	Gold Mastic on Sink		X			X			Assumed	No	Assumed Asbestos
	Interior Caulking		X			X			Assumed	No	Assumed Asbestos
W3 1st Floor Level	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Abated October 23, 2014 New 12" x 12" Flooring
	Plaster	V2018-0001							Non-ACM		

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Staff Room 25 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		New Material Observed 2018
	Plaster	V2018-0001							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings	VHS-03							25-50% CHR		Under Sink Not Observed 2018 Fibreglass Insulation
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Ventilator Unit		X					X	Assumed	Yes	Assumed Asbestos
	Interior Caulking		X			X			Assumed	No	Assumed Asbestos
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"	V2018-0002	X			X			1% CHR	No	
	Vinyl Floor Tiles 12" x 12"	VHSP-01							Non-ACM		Replaced Aug 2004
W4 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
W5 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Ventilator Unit		X					X	Assumed	Yes	Assumed Asbestos
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
H1 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos Various Doors / Rep March 4, 2008
	Thermal Insulation Pipe Fittings	VHS-03	X				X		25-50% CHR	Yes	Partially Abated ACM Fittings Remain

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
W1 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	S2018-0010A-C	X			X			1% CHR	No	
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Not Observed 2018
W2 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos
	Ceiling Tiles	VHS-01							Non-ACM		Poor Visibility Above
OF3 1st Floor Level	Ceiling Tiles	V2018-0003	X				X		5% AMO 1% CHR	No	
	Thermal Insulation Pipe Straights								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Material
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
OF4 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	Poor Visibility Above New Material Observed 2018
	Ceiling Tiles	V2018-0003	X				X		No	5% AMO 1% CHR	
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Plaster	V2018-0001								Non-ACM	
	Thermal Insulation Pipe Straights and Fittings									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								25-50% CHR	Abated Summer 2004
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Material
	Baseboard Mastic	VHSP-02								Non-ACM	
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Ceiling Tiles	VHS-01								Non-ACM	No Access Above
OF9 1st Floor Level	Baseboard Mastic	VHSP-02								Non-ACM	
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Thermal Insulation Pipe Straights and Fittings									Non-ACM	Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	S2018-0008A	X			X			No	1% CHR	
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
S11 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	No Access Above
	Ceiling Tiles	S2018-0004B	X				X		No	1% AMO 4% CHR	
	Baseboard Mastic	VHSP-02								Non-ACM	
	Vinyl Floor Tiles 12" x 12"	S2018-0008B	X			X			No	1% CHR	
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Non-ACM	Not Observed 2018
Classroom 27 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	No Access Above New Material Observed 2018
	Ceiling Tiles	V2018-0004	X				X		No	1% AMO 4% CHR	
	Plaster	V2018-0001								Non-ACM	
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Material
	Baseboard Mastic	VHSP-02								Non-ACM	
Classroom 28 2nd Floor Level (Above CR27)	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Baseboard Mastic	V2018-0007								Non-ACM	
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Material Observed 2018
	Vinyl Floor Tiles 12" x 12"	S2018-0009A-C	X			X			No	1% CHR	
	Thermal Insulation Pipe Straights and Fittings									Non-ACM	Fibreglass Insulation
	Ceiling Tiles	V2018-0004	X				X		No	1% AMO 4% CHR	New Material Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
W6 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Ventilator Unit		X					X	Assumed	Yes	Assumed Asbestos
	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Ventilator Unit		X					X	Assumed	Yes	Assumed Asbestos
OF11 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		No Access Above
	Ceiling Tiles	S2018-0003C	X				X		5% AMO 1% CHR	No	New Material Observed 2018
	Baseboard Mastic	VHSP-02							Non-ACM		
	Thermal Insulation Pipe Straights								Non-ACM		Fibreglass Insulation
OF10 1st Floor Level	Vinyl Floor Tiles 12" x 12"	VHSP-01							Non-ACM		
	Ceiling Tiles	VHS-01							Non-ACM		No Access Above
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
S3 / E1 1st Floor Level	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Plaster	S2018-0001E							Non-ACM		
	Baseboard Mastic	VHSP-02							Non-ACM		Not Observed 2018
	Thermal Insulation Pipe Straights and Fittings								Non-ACM		Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	VHSP-01							Non-ACM		Not Observed 2018
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos Present At E1 Only

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible		
S2 1st Floor Level	Plaster Ceiling	VHS-04								No Access Above
	Baseboard Mastic	VHSP-02								
	Thermal Insulation Pipe Straights and Fittings									Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Not Observed 2018
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed Asbestos
	Plaster Ceiling	VHS-04								No Access Above
S4 1st Floor Level	Baseboard Mastic	VHSP-02								
	Vinyl Floor Tiles 12" x 12"	VHSP-01								Not Observed 2018
	Thermal Insulation Pipe Straights and Fittings									Fibreglass Insulation
	Vinyl Floor Tiles 12" x 12"	V2018-0002	X			X			No	
	Fire Door		X					X	Yes	Assumed Asbestos
	Ceiling Tiles	VHS-01								New Material Observed 2018
	Upper Ceiling Tiles	VHS-02								No Access Above
Classroom 11 1st Floor Level	Thermal Insulation Pipe Straights									Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								Abated Summer 2004
	Gold Mastic on Sink		X			X			No	Assumed Asbestos
	Chalkboard		X			X			No	Assumed Asbestos
	Baseboard Mastic	VHSP-02								
	Fire Door		X					X	Yes	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 10 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	
	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								25-50% CHR	Abated Summer 2004
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Chalkboard		X			X			No	Assumed	Assumed Asbestos
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Baseboard Mastic	VHSP-02								Non-ACM	
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
Classroom 9 1st Floor Level	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos
	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								25-50% CHR	Under Sink Not Observed 2018 Fibreglass Insulation
	Baseboard Mastic	VHSP-02								Non-ACM	
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Chalkboard		X			X			No	Assumed	Assumed Asbestos
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 8 1st Floor Level	Ceiling Tiles	VHS-01								Non-ACM	New Material Observed 2018
	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								25-50% CHR	Under Sink Not Observed 2018 Fibreglass Insulation
	Baseboard Mastic	VHSP-02								Non-ACM	
	Gold Mastic on Sink		X			X			No	Assumed	Assumed Asbestos
	Chalkboard		X			X			No	Assumed	Assumed Asbestos
B1 1st Floor Level	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Interior Caulking		X			X			No	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos
	Plaster Ceiling	VHS-04	X						Yes	Non-ACM	No Access Above
	Fire Door							X		Assumed	Assumed Asbestos
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
M1 1st Floor Level	Thermal Insulation on Ducting									Non-ACM	Fibreglass Insulation
	Plaster Ceiling	VHS-04								Non-ACM	No Access Above
	Plaster	S2018-0001F, G								Non-ACM	
	Baseboard Mastic	VHSP-02								Non-ACM	Not Observed 2018
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Thermal Insulation Small Pipe Fittings	VHS-03	X				X		Yes	25-50% CHR	
	Thermal Insulation Large Pipe Fittings	VHS-03								25-50% CHR	Not Observed 2018
	Vinyl Floor Tiles 9" x 9"									Assumed	Assumed Asbestos Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V00001)

Location	Material Examined	Sample Number	Condition			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor			
C1 1st Floor Level	Vinyl Floor Tiles 12" x 12"	S2018-00068, C	X			1% CHR	No	
	Baseboard Mastic	V2018-0007				Non-ACM		
	Plaster	V2018-0001				Non-ACM		
	Thermal Insulation Pipe Straights & Fittings					Non-ACM		Fibreglass Insulation
C2 1st Floor Level	Vinyl Floor Tiles 12" x 12"					Non-ACM		New Material
	Baseboard Mastic	V2018-0007				Non-ACM		
	Plaster	V2018-0001				Non-ACM		
	Thermal Insulation Pipe Straights & Fittings					Non-ACM		Fibreglass Insulation
Science Room 7 1st Floor Level	Ceiling Tiles	VHS-01				Non-ACM		Not Observed 2018 New Fibreglass Ceiling Tiles
	Upper Ceiling Tiles	VHS-02				Non-ACM		No Access Above
	Thermal Insulation Pipe Straights					Non-ACM		Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03				25-50% CHR		Under Sink Not Observed 2018
	Plaster	V2018-0001				Non-ACM		
	Ventilator Unit		X			Assumed	Yes	Assumed Asbestos
	Interior Caulking		X			Assumed	No	Assumed Asbestos
	White Mastic on Sink					Non-ACM		New Material
	Baseboard Mastic	VHSP-02				Non-ACM		New Material Observed 2018
	Fire Door		X			Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"					Assumed		Assumed Asbestos Abated May 2004 New 12" x 12" Flooring

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
W10 / W11 1st Floor Level	Ceiling Tiles									Non-ACM	New Material (Fibreglass)
	Ceramic Tiles									Non-ACM	
Custodial Room 4 1st Floor Level	Plaster	V2018-0001								Non-ACM	
	Baseboard Mastic	V2018-0007								Non-ACM	
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos
	Ceiling Tiles	VHS-01								Non-ACM	
Classroom 6 1st Floor Level (No Longer Present - Part of CRS & CR7))	Upper Ceiling Tiles	VHS-02								Non-ACM	No Access Above
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03								25-50% CHR	Abated Summer 2004
	Baseboard Mastic	VHSP-02								Non-ACM	
	Fire Door									Assumed	Assumed Asbestos Removed June 2012
S1 1st Floor Level (No Longer Present)	Vinyl Floor Tiles 9" x 9"									Assumed	Assumed Asbestos Removed June 2012
	Plaster Ceiling	VHS-04								Non-ACM	No Access Above
	Baseboard Mastic	VHSP-02								Non-ACM	
	Fire Door									Assumed	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"									Assumed	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessibility		
Classroom 1 1st Floor Level	Ceiling Tiles	VHS-01						Not Observed 2018 New Material (Fibreglass)
	Upper Ceiling Tiles	VHS-02						No Access Above
	Thermal Insulation Pipe Straights							Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03						Under Sink Not Observed 2018
	Plaster	V2018-0001						
	Ventilator Unit		X				Yes	Assumed Asbestos
	Interior Caulking		X				No	Assumed Asbestos
	White Mastic on Sink							
	Baseboard Mastic	VHSP-02						New Material Observed 2018
	Fire Door							Assumed Asbestos Removed June 2012
WB 1st Floor Level	Vinyl Sheet Flooring							New Material
	Vinyl Floor Tiles 9" x 9"							Assumed Asbestos Removed June 2012 New 12" x 12" Flooring
	Ceiling Tiles							Fibreglass Ceiling Tiles
	Ceramic Tiles							
	Ceiling Tiles	VHS-01						
	Upper Ceiling Tiles	VHS-02						No Access Above
	Thermal Insulation Pipe Straights							Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03						Repaired March 2006
	Baseboard Mastic	VHSP-02						
	Fire Door							Assumed Asbestos Removed June 2012
Classroom 2 1st Floor Level (No Longer Present - Part of CR1)	Vinyl Floor Tiles 9" x 9"							Assumed Asbestos Removed June 2012

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Asbestos Contant	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessibility		
Classroom 3 1st Floor Level	Ceiling Tiles	VHS-01						Not Observed 2018 New Material (Fibreglass)
	Upper Ceiling Tiles	VHS-02						No Access Above
	Thermal Insulation Pipe Straights							Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03						Repaired September 2004 Not Observed 2018
	Plaster	V2018-0001						
	Ventilator Unit		X			X	Yes	Assumed Asbestos
	Interior Caulking		X			X	No	Assumed Asbestos
	White Mastic on Sink							
	Baseboard Mastic	VHSP-02						New Material Observed 2018
	Fire Door							Assumed Asbestos Removed June 2012
W9 1st Floor Level Storage S13 (Entrance from Outside)	Vinyl Sheet Flooring							New Material
	Vinyl Floor Tiles 9" x 9"							Assumed Asbestos Removed June 2012 New 12" x 12" Flooring
	Ceiling Tiles							New Material (Fibreglass)
	Ceramic Tiles							
	Ceiling Tiles							New Material (Fibreglass)
	Baseboard Mastic							New Material

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessibility		
						Not Accessible		
						Rarely Accessible		
						Accessible		
Classroom 4 1st Floor Level (No Longer Present - Part of CR3)	Ceiling Tiles	VHS-01					Non-ACM	
	Upper Ceiling Tiles	VHS-02					Non-ACM	No Access Above
	Thermal Insulation Pipe Straights						Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Fittings	VHS-03					25-50% CHR	Under Sink
	Baseboard Mastic	VHSP-02					Non-ACM	
	Fire Door						Assumed	Assumed Asbestos Removed June 2012
	Vinyl Floor Tiles 9" x 9"						Assumed	Assumed Asbestos Removed March 2006 / Removed June 2012
	Ceiling Tiles	VHS-01					Non-ACM	Not Observed 2018 New Material (Fibreglass)
	Upper Ceiling Tiles	VHS-02					Non-ACM	No Access Above
	Thermal Insulation Pipe Straights						Non-ACM	Fibreglass Insulation
Classroom 5 1st Floor Level	Thermal Insulation Pipe Fittings	VHS-03					25-50% CHR	Under Sink Not Observed 2018
	Plaster	V2018-0001					Non-ACM	
	Ventilator Unit		X				Assumed	Assumed Asbestos
	Interior Caulking		X				Assumed	Assumed Asbestos
	White Mastic on Sink						Non-ACM	
	Baseboard Mastic	VHSP-02					Non-ACM	New Material Observed 2018
	Fire Door		X				Assumed	Assumed Asbestos
	Vinyl Floor Tiles 9" x 9"						Assumed	Assumed Asbestos Abated May 2004 New 12" x 12" Flooring

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessibility		
H2 / H3 / H4 1st Floor Level	Ceiling Tiles	VHS-01					Not Accessible	
	Ceiling Tiles	V2018-0004	X				Rarely Accessible	
	Ceiling Tiles	V2018-0003	X				Accessible	
	Plaster	V2018-0001						
	Fire Door		X					Assumed Asbestos Repaired June 2004
	Thermal Insulation Pipe Straights							Fibreglass Insulation
	Thermal Insulation Pipe Fittings	SHS-03	X					Present Above Ceiling
OF1 1st Floor Level	Ceiling Tiles	VHS-01						New Material Observed 2018
	Ceiling Tiles	V2018-0003	X					
	Baseboard Mastic	VHSP-02						
	Fire Door		X					
	Plaster Ceiling	VHS-04						Assumed Asbestos
	Interior Caulking		X					No Access Above
	Thermal Insulation Pipe Straights & Fittings							Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"							Fibreglass Insulation
	Vinyl Floor Tiles 9" x 9"							New Material
								Assumed Asbestos Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
OF2 1st Floor Level	Ceiling Tiles	VHS-01							Non-ACM		New Material Observed 2018
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Thermal Insulation Pipe Straights	SHS-06							Non-ACM		Not Observed 2018
	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Material
OF5 / OF6 1st Floor Level (No Longer Present)	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Not Observed 2018
	Ceiling Tiles	VHS-01							Non-ACM		
	Baseboard Mastic	VHSP-02							Non-ACM		
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Plaster Ceiling	VHS-04							Non-ACM		No Access Above
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos OF6 Only
Roof Top Exterior									Non-ACM		New Material
	Vermiculite Inside Walls		X					X	Assumed	Yes	Assumed Asbestos
	Exterior Plaster Overhang		X				X		Assumed	Yes	Assumed Asbestos
	Exterior Caulking		X			X			Assumed	No	Assumed Asbestos
	Exterior Firestop Materials		X			X			Assumed	No	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

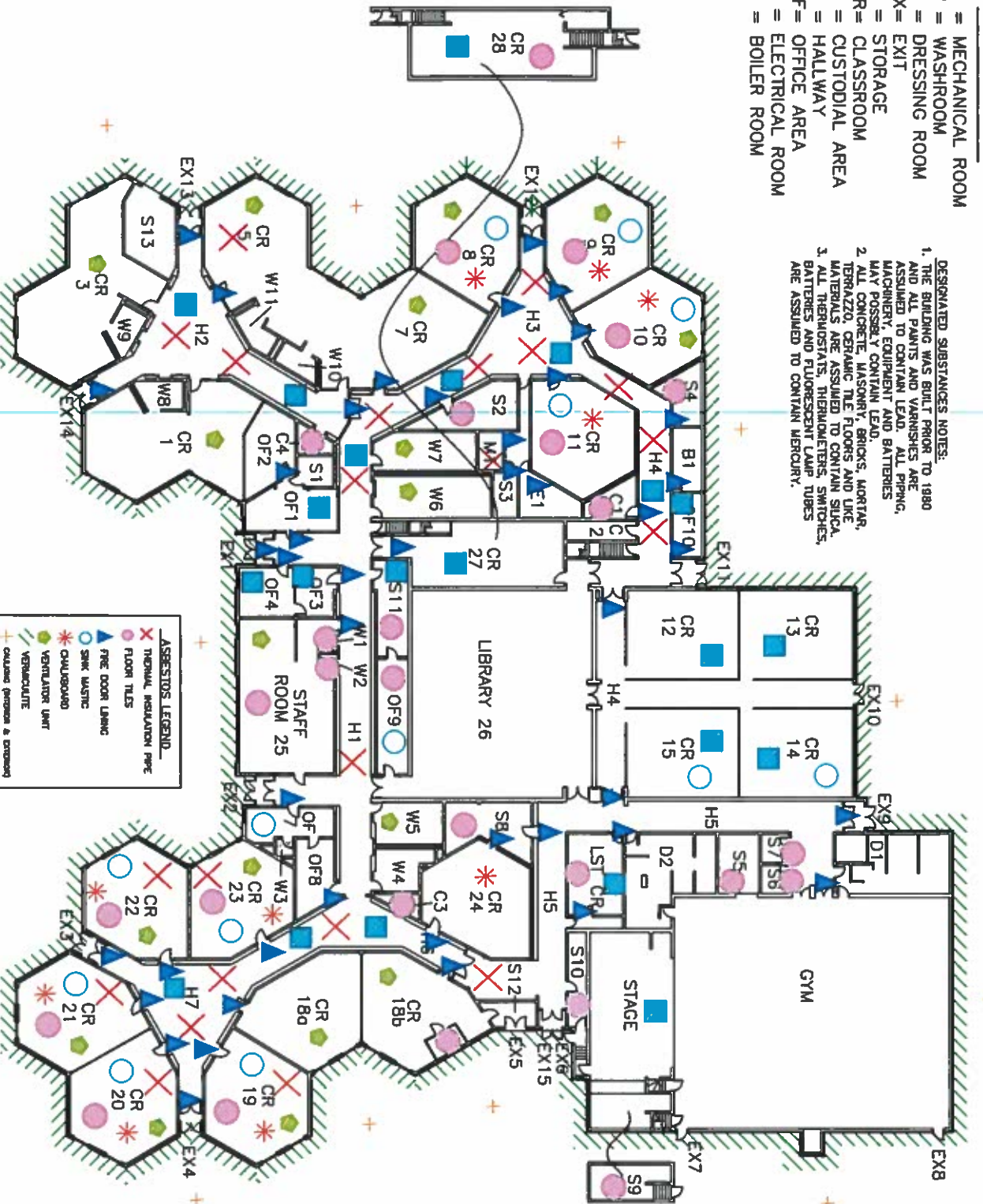
Location	Material Examined	Sample Number	Condition			Comments
			Good	Fair	Poor	
Interior/Exterior Throughout	Lead - Paint Samples HS2 - HS9, CR3	HS-1 - HS-9	X			Range From ND to 1500PPM Lead
	Lead - All Paints & Varnishes		X			Assume Lead-Containing
	Lead - Piping, Machinery, Equipment, Batteries					Assume Lead-Containing
Interior/Exterior Throughout	Silica - All Concrete, Brick, Masonry, Terrazzo					Assume Silica-Containing
	Art Class/Pottery Lesson					Assume Silica-Containing
Interior/Exterior Throughout	Mercury - Some Thermostats, Switches, Batteries, Fluorescent Bulbs					Assume Mercury-Containing

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

LEGEND

M = MECHANICAL ROOM
W = WASHROOM
D = DRESSING ROOM
EX = EXIT
S = STORAGE
CR = CLASSROOM
C = CUSTODIAL AREA
H = HALLWAY
OF = OFFICE AREA
E = ELECTRICAL ROOM
B = BOILER ROOM

DESIGNATED SUBSTANCES NOTES:
1. THE BUILDING WAS BUILT PRIOR TO 1980 AND ALL PAINTS AND VARNISHES ARE ASSUMED TO CONTAIN LEAD. ALL PIPING, MACHINERY, EQUIPMENT AND BATTERIES MAY POSSIBLY CONTAIN LEAD.
2. ALL CONCRETE, MASONRY, BRICKS, MORTAR, TERRAZZO, CERAMIC TILE FLOORS AND LIKE MATERIALS ARE ASSUMED TO CONTAIN SILICA.
3. ALL THERMOSTATS, THERMISTERS, SWITCHES, BATTERIES AND FLUORESCENT LAMP TUBES ARE ASSUMED TO CONTAIN MERCURY.



DESIGNATED SUBSTANCES
X THERMAL INSULATION PIPE
▲ FLOOR TILES
● PRE-DOOR LINING
★ PAINT MASTIC
○ CAULKING
▲ VENTILATOR UNIT
+ CEILING TILES
NOTE: ASBESTOS MAY BE IN OR AROUND THE SYMBOL.

GREATER ESSEX COUNTY
DISTRICT SCHOOL BOARD

HARROW SENIOR PUBLIC

TITLE:

DESIGNATED
SUBSTANCES

MAIN FLOOR

DRAWN BY:

A.S.

SCALE:

N.T.S.

DATE:

SEPT 25, 2019

ADDRESS:

400 CENTRE ST E
HARROW, ONT.
M9R 1G9

GREATER ESSEX COUNTY DISTRICT SCHOOL BOARD

Facility Services, 280 Eugenie St. E., Windsor, Ontario N8X 2X8, TEL: (519) 966-0034 Fax: (519) 969-1530



Designated Substance Management Plan

**M. D. Bennie Public School
159 Sherk, Leamington, Ontario, N8H 3K8**

Original Survey Dated: August 28, 1995

Revision Dates: May 29, 1996, August 1, 2001, June 2003, August 6, 2003, January 2005, July 2006, August 9, 2007, August 7, 2008, August 8, 2009, August 11, 2010, August 11, 2011, August 11, 2012, August 11, 2013, and August 11, 2014, February 11, 2015, February 11, 2016, February 11, 2017, February 11, 2018, February 11, 2019

Current Version: February 11, 2020

Health & Safety Department

Executive Summary

The Greater Essex County District School Board (GECDSB) conducted an annual update for potential Designated Substances present in the building facility of Margaret D Bennie Public School (MD Bennie). This notes the conditions and locations of observed, known and suspected Designated Substances found in accessible areas of the building. Asbestos (friable and non-friable ACMs), Lead, Silica, and Mercury are the four most common types of Designated Substances encountered at GECDSB sites.

Other Designated Substances such as Arsenic, Benzene, Vinyl Chloride, Acrylonitrile, Coke Oven Emissions, Ethylene Oxide and Isocyanates are not likely to be found at a typical GECDSB site.

This annual update involved reviewing and documenting known abatements, repairs and conditional changes of known or suspected Designated Substances utilizing the work order system.

The following information provides a summary of where observed, known and suspected Designated Substances are located at this site.

Asbestos

Friable asbestos (assumed) fire door linings are present throughout the building. Friable asbestos (assumed) vermiculite insulation is assumed to be present inside block wall cavities around the exterior of the building. Non-friable asbestos (assumed) black and gold anti-sweat mastics are present on the underside of sinks in several locations. Non-friable asbestos (assumed) chalkboards are present throughout the building. Non-friable asbestos (assumed) caulking is present on interior windows throughout the building. Non-friable asbestos (assumed) vinyl floor tiles 9 inches by 9 inches are present throughout the building. Non-friable asbestos (assumed) exterior caulking materials are present on windows and doors of the building. Non-friable asbestos (assumed) firestop materials are present on exterior building penetrations. These friable and non-friable ACMs were found to be in good physical condition. Refer to tables and floor plans for more specific

information.

Additional ACMs may exist in the above-noted non accessible areas as well as in enclosed areas behind walls, ceilings or floor surfaces, which were not accessible without causing unplanned physical demolition/destruction.

Lead

The original building structure known as MD Bennie PS was built 1959 and therefore all paints and varnishes in the original building structure are assumed to contain Lead.

A building addition / renovation (Port-a-pack) was conducted in 1993 in which all paints and varnishes utilized per this addition / renovation would fall under the 1992 Coatings Regulation and would be < 600 PPM Lead.

It should be noted that materials such as piping, machinery, equipment and batteries may also possibly contain lead.

Silica

All concrete, bricks, masonry, terrazzo, mortar, ceramic floors, sand, ceiling tiles and like materials are assumed to contain Silica.

On occasion an Arts/Pottery class may take place in which they utilize Clay Body 700 which is 0.5% silica containing. This is temporary as such Clay Body 700 is brought in from a third party and removed after. No sanding is conducted and all such pottery work is done while wet/moist.

On occasion schools may wish to purchase sand for curriculum related activities. Such sand purchases are to be made through Webstock and the sand has to be Silica Free.

Mercury

Possible Mercury containing thermostats, thermometers, switches, batteries and fluorescent lamp tubes are assumed to contain Mercury.

Disclaimer

The information and opinions rendered in this report are exclusively for use by the above noted. Additional Designated Substances may exist at this site in non-accessible areas as well as in enclosed areas behind walls, ceilings or floor surfaces which were not accessible. The Health & Safety Department does not warrant nor represent that all designated substances including asbestos containing materials have been identified in the building facility.

Tim Lauzon, I. H., E. P.,
Health & Safety Officer
GECDSB

2019 – 2020 School Year



Laboratory Report

Client: Paradigm Environmental Svcs., Inc.

130 Connaught Avenue
Suite 404
London, ONT N5Y 3A7

Attention: Tim Lauzon

Project Ref # -

Purchase Order # -

Project: Bulk Sample Analysis

Essex County Board of Education

Laboratory Project # ON605179

Project Manager: Paul Chopra

Start Date: 5/14/96

Report Date: 5/20/96

Analysis Type: Bulk Asbestos Analysis by Polarized Light Microscopy

Authorized Signature Paul S. Chopra
Paul S. Chopra, Laboratory Manager

Analysis Results Table

Client Sample	CLJ Sample #	Sample Location / Description	Asbestos Content	Analyst Comment	Non-Asbestos Content	Analyst - Date
M.D. Bennie Public School, Essex Co. BOE						
The following 5 samples were submitted by Paradigm Environmental Svcs., Inc. on 5/14/96 and analyzed in accordance with PLM - ELAP Method 198.1						
M-01	174030	Classroom #15 Drywall joint fill compound				SK 5/17/96
		50% White Fibres	No Asbestos Detected using PLAI	100% Cellulose		
		50% White powder	No Asbestos Detected using PLAI	2% Cellulose 98% Non-Fibrous Material		
No asbestos detected in sample						
M-02	174031	Classroom #15 Mastic from vinyl floor tile				SK 5/17/96
		97% Black flexible	No Asbestos Detected using PLAI	100% Non-Fibrous Material		
		3% Tan mastic	No Asbestos Detected using PLAI	50% Cellulose 50% Non-Fibrous Material		
No asbestos detected in sample - NOB Material						
M-03	174032	Classroom #16 12x12 vinyl floor compound				SK 5/17/96
		100% Gray floor tile	No Asbestos Detected using PLAI	100% Non-Fibrous Material		
No asbestos detected in sample - NOB Material						
M-04	174033	A.V. room Mastic from vinyl floor tile				SK 5/17/96
		98% Black flexible	No Asbestos Detected using PLAI	100% Non-Fibrous Material		
		2% Tan mastic	No Asbestos Detected using PLAI	100% Non-Fibrous Material		
No asbestos detected in sample - NOB Material						



1815 Love Road
Grand Island, NY 14072
716-773-7625 FAX 716-773-7624

NIST NVLAP Lab # 1208-01
NYS DOH ELAP Lab # 10954



Analysis Results Table

Client Sample	CLI Sample #	Sample Location / Description	Asbestos Content	Analyst Comment	Analyst - Date
M-05	174034	A.V. room 12x12 vinyl floor tile	No Asbestos Detected using PLAI	Non-Asbestos Content	SK 5/17/96
No asbestos detected in sample - NOB Material		100% Tan floor tile	No Asbestos Detected using PLAI	100% Non-Fibrous Material	

Additional testing is recommended for any material which contains <1% asbestos or NOB (non-friable organically bound) bulk materials which are negative or <1% asbestos. Analysis by Polarized Light Microscopy (PLM) has a degree of uncertainty that is dependent on the sample matrix, non-asbestos minerals present, size of the asbestos present, the sample homogeneity and analyst variability. PLM coefficients of variance range from approx. 1.8, at the quantitation limit of 1% to 0.1 at high fiber concentrations. All PLM analyses must be reviewed with these factors taken into consideration.

These results are submitted pursuant to Chopra-LEE, Inc.'s current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results or recommendations are used or interpreted. These results pertain only to the items tested. Any reproduction of this document must include the entire document in order for the report to be valid. Certification by NIST through NTLAP or New York State through ELLAP does not constitute government endorsement of this testing facility. Unless notified in writing to return the samples covered by this report, Chopra-LEE, Inc. will store what remains of the samples for a period of 18 months before discarding.



1815 Love Road
Grand Island, NY 14072
716-773-7625 FAX 716-773-7624

NIST NVLAP Lab # 120K-01
NYS DOH ELLAP Lab # 10954

Page # 2 of 2
Report Date 5/25/96
Laboratory # CH065179
Client # Peridigm Environmental Services, Inc.

**Supplementary Certificate of Analysis
Margaret D. Bennie PS**

Sample ID	Location	% Asb & Type
MDB-01	Ceiling Tiles	Non-ACM
'S' in Gym		
MDB-02	No MDB-02 Observed	N/A
N/A		
MDB-03	Ceiling Tiles	Non-ACM
Not Marked as 'S' anywhere in Original Data Charts		
MDB-04	Ceiling Tiles	Non-ACM
OF4		
MDB-05	Plaster	Non-ACM
Not Marked as 'S' anywhere in Original Data Charts		
MDB-06	Plaster	Non-ACM
Not Marked as 'S' anywhere in Original Data Charts		
MDB-07	No MDB-07 Observed	
MDB-08	Thermal Insulation Pipe Straights	Non-ACM
Boiler Room/C1/M1		
MDB-09	Thermal Insulation Pipe Fittings	20-30% CHR
Boiler Room/C1/M1		
MDB-10	Thermal Insulation Pipe Fittings	20-30% CHR
H1 (CR1-OF6)		

Certificate of Analysis

Indoor Environmental Specialists Inc.

330 Richmond Street Unit 101
Chatham, ON N7M 1P5
Attn: Chris Croft

Client PO: C3515
Project: C3515
Custody:

Report Date: 17-Apr-2019
Order Date: 15-Apr-2019

Order #: 1916074

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Paracel ID	Client ID
1916074-01	2018-0001B - DJC
1916074-02	2018-0001C - DJC
1916074-03	2018-0002C - Plaster
1916074-04	2018-0002D - Plaster
1916074-05	2018-0002E - Plaster
1916074-06	2018-0003C - Baseboard Mastic
1916074-07	2018-0004B - 2x4 Stipple Patterned ACT w/ Pinholes
1916074-08	2018-0004C - 2x4 Stipple Patterned ACT w/ Pinholes

Approved By:



Emma Diaz
Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Client: Indoor Environmental Specialists Inc.

Client PO: C3515

Report Date: 17-Apr-2019

Order Date: 15-Apr-2019

Project Description: C3515

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1916074-01	12-Apr-19	White	Drywall Joint Compound	No	Client ID: 2018-0001B - DJC	
					Non-Fibers	100
1916074-02	12-Apr-19	White	Drywall Joint Compound	No	Client ID: 2018-0001C - DJC	
					Non-Fibers	100
1916074-03	12-Apr-19	Grey/White	Plaster	No	Client ID: 2018-0002C - Plaster	
					[ASLYR]	100
1916074-04	12-Apr-19	Grey/White	Plaster	No	Client ID: 2018-0002D - Plaster	
					[ASLYR]	100
1916074-05	12-Apr-19	Grey/White	Plaster	No	Client ID: 2018-0002E - Plaster	
					[ASLYR]	100
1916074-06	12-Apr-19	Brown	Baseboard Mastic	No	Client ID: 2018-0003C - Baseboard Mastic	
					Non-Fibers	100
1916074-07	12-Apr-19	Beige	Ceiling Tile	No	Client ID: 2018-0004B - 2x4 Stipple Patterned ACT w/ Pinholes	
					Cellulose	40
					MMVF	30
					Non-Fibers	30
1916074-08	12-Apr-19	Beige	Ceiling Tile	No	Client ID: 2018-0004C - 2x4 Stipple Patterned ACT w/ Pinholes	
					Cellulose	40
					MMVF	30
					Non-Fibers	30

* MMVF: Man Made Vitreous Fibers: Fiberglass, Mineral Wool, Rockwool, Glasswool

Certificate of Analysis
Client: Indoor Environmental Specialists Inc.
Client PO: C3515

Report Date: 17-Apr-2019
Order Date: 15-Apr-2019
Project Description: C3515

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	1 - Mississauga	200863-0	16-Apr-19

* Reference to the NVLAP term does not permit the user of this report to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Qualifier Notes

Sample Qualifiers :

ASLYR: Layers were noted for this sample, however, the entire sample was homogenized per client request.

Work Order Revisions | Comments

None

**Supplementary Certificate of Analysis
Margaret D. Bennie PS**

Sample ID	Location	% Asb & Type
MDB-01	Ceiling Tiles	Non-ACM
'S' in Gym		
MDB-02	No MDB-02 Observed	N/A
N/A		
MDB-03	Ceiling Tiles	Non-ACM
Not Marked as 'S' anywhere in Original Data Charts		
MDB-04	Ceiling Tiles	Non-ACM
OF4		
MDB-05	Plaster	Non-ACM
Not Marked as 'S' anywhere in Original Data Charts		
MDB-06	Plaster	Non-ACM
Not Marked as 'S' anywhere in Original Data Charts		
MDB-07	No MDB-07 Observed	
MDB-08	Thermal Insulation Pipe Straights	Non-ACM
Boiler Room/C1/M1		
MDB-09	Thermal Insulation Pipe Fittings	20-30% CHR
Boiler Room/C1/M1		
MDB-10	Thermal Insulation Pipe Fittings	20-30% CHR
H1 (CR1-OF6)		

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 15, New Addition 1st Floor Level	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	SM-01								Non-ACM	
	Baseboard Mastic	SM-02								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
	Chalkboard									Non-ACM	New Material
	Fire Door									Non-ACM	New Material
Classroom 16, New Addition 1st Floor Level	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Tiles February 2008
	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
	Chalkboard									Non-ACM	New Material
Classroom 14, New Addition 1st Floor Level	Fire Door									Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"	SM-03								Non-ACM	
	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
	Fire Door									Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Tiles December 2001
	Ceiling Tiles									Non-ACM	
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
	Fire Door									Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Tiles December 2001
	Ceiling Tiles									Non-ACM	
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
	Fire Door									Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Tiles December 2001

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible		
Classroom 13, New Addition 1st Floor Level	Ceiling Tiles									
	Drywall Joint Compound	VM-01							Non-ACM	New Material
	Baseboard Mastic	VM-02							Non-ACM	
	Interior Window Caulking								Non-ACM	New Material
	Ventilator Unit								Non-ACM	New Material
	Fire Door								Non-ACM	New Material
H1 (S6-CR16) 1st Floor Level	Vinyl Floor Tiles 12" x 12"								Non-ACM	New Tiles December 2000
	Ceiling Tiles								Non-ACM	
	Baseboard Mastic	VM-02							Non-ACM	New Material
	Drywall Joint Compound	VM-01							Non-ACM	
	Plaster	V201B-0002							Non-ACM	
	Fire Door		X					X	Assumed	Assumed Asbestos
Classroom 13, New Addition 1st Floor Level	Vinyl Floor Tiles 12" x 12"								Non-ACM	New Material
	Ceiling Tiles								Non-ACM	New Material
	Drywall Joint Compound	VM-01							Non-ACM	
	Baseboard Mastic	VM-02							Non-ACM	
	Interior Window Caulking								Non-ACM	New Material
	Ventilator Unit								Non-ACM	New Material
	Fire Door								Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"	VM-03							Non-ACM	
	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible		
Classroom 12, New Addition 1st Floor Level	Ceiling Tiles									
	Drywall Joint Compound	VM-01							Non-ACM	New Material
	Baseboard Mastic	VM-02							Non-ACM	
	Interior Window Caulking								Non-ACM	New Material
	Ventilator Unit								Non-ACM	New Material
	Fire Door								Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"	VM-03							Non-ACM	
C2 1st Floor Level	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation
	Ceiling Tiles									
	Drywall Joint Compound	VM-01							Non-ACM	New Material
	Baseboard Mastic	VM-02							Non-ACM	
	Vinyl Floor Tiles 12" x 12"	VM-03							Non-ACM	New Material
	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation
	Ceiling Tiles								Non-ACM	New Material
W7/W8/W9/W11 1st Floor Level	Drywall Joint Compound	VM-01							Non-ACM	
	Baseboard Mastic	VM-02							Non-ACM	
	Vinyl Floor Tiles 12" x 12"	VM-03							Non-ACM	Present in W7 Only
	Ceramic Tile								Non-ACM	Present in W8/W9 Only
	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 9, Library OF9 1st Floor Level	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit		X					X	Yes	Assumed	Assumed Asbestos
	Fire Door		X					X	Yes	Assumed	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"	VM-03								Non-ACM	New Material
Classroom 10, New Addition 1st Floor Level	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Chalkboard									Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
Classroom 8, New Addition 1st Floor Level	Fire Door									Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Tiles March 2001
	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Chalkboard									Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Ventilator Unit									Non-ACM	New Material
	Fire Door									Non-ACM	New Material
	Vinyl Floor Tiles 12" x 12"									Non-ACM	New Floor March 2001
	Baseboard Mastic	VM-02								Non-ACM	

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
OF8 1st Floor Level	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
	Fire Door		X					X	Yes	Assumed Asbestos	
C2 1st Floor Level	Vinyl Floor Tiles 12" x 12"	VM-03								Non-ACM	New Material
	Ceiling Tiles									Non-ACM	New Material
	Drywall Joint Compound	VM-01								Non-ACM	
	Baseboard Mastic	VM-02								Non-ACM	
S6 (exterior storage) 1st Floor Level	Fire Door		X					X	Yes	Assumed Asbestos	
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Ceiling Tiles									Non-ACM	Not Observed 2018
	Drywall Joint Compound	VM-01								Non-ACM	
S6 (exterior storage) 1st Floor Level	Baseboard Mastic	VM-02								Non-ACM	
	Plaster	V2018-0002								Non-ACM	
	Vinyl Floor Tiles 12" x 12"	VM-03								Non-ACM	Not Observed 2018
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
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Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible		
S5 1st Floor Level	Upper Plaster Ceiling	VMDB-05							Non-ACM	No Access Above
	Ceiling Tiles	V2018-0004							Non-ACM	
	Drywall Joint Compound	V2018-0001							Non-ACM	
	Plaster	V2018-0002							Non-ACM	
	Vinyl Floor Tiles 9" x 9"								Assumed	Abated Prior 2011 New 12" x 12" Tiles
	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation
	Baseboard Mastic	VM-04							Non-ACM	
	Fire Door		X					X	Assumed	Assumed Asbestos
	Baseboard Mastic	V2018-0003							Non-ACM	
	Drywall Joint Compound	V2018-0001							Non-ACM	
OF7 (Formerly M2) 1st Floor Level	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation
	Plaster	V2018-0002							Non-ACM	
	Fire Door		X					X	Assumed	Assumed Asbestos
	Plaster Ceiling	VMDB-05							Non-ACM	No Access Above
	Ceiling Tiles								Non-ACM	New Material
	Interior Window Caulking								Non-ACM	New Material
	Vinyl Floor Tiles 9" x 9"								Assumed	Abated Prior 2011 New 12" x 12" Tiles
	Thermal Insulation Pipe Straights & Fittings								Non-ACM	Fibreglass Insulation
	Plaster	V2018-0002							Non-ACM	
	Baseboard Mastic	VM-04							Non-ACM	
LST / OF5 1st Floor Level									Non-ACM	

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Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
OF6 1st Floor Level	Plaster Ceiling	VMDB-05								Non-ACM	No Access Above
	Drywall Joint Compound	V2018-0001								Non-ACM	
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Includes Closet & Entry to Office Area
	Baseboard Mastic	VM-04								Non-ACM	
	Ceiling Tiles	VMDB-03								Non-ACM	No Access Above
W5 1st Floor Level	Vinyl Floor Tiles 12" x 12"	VM-05								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Baseboard Mastic	VM-04								Non-ACM	
	Plaster Wall	VMDB-06								Non-ACM	
	Ceiling Tiles	VMDB-03								Non-ACM	No Access Above
W6 1st Floor Level	Vinyl Floor Tiles 12" x 12"	VM-05								Non-ACM	
	Interior Window Caulking									Non-ACM	New Material
	Thermal Insulation Pipe Straights & Fittings									Non-ACM	Fibreglass Insulation
	Baseboard Mastic	VM-04								Non-ACM	
	Plaster Wall	VMDB-06								Non-ACM	
OF5 1st Floor Level	Plaster Ceiling	VMDB-05								Non-ACM	No Access Above
	Drywall Joint Compound	V2018-0001								Non-ACM	
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed	Assumed Asbestos
	Baseboard Mastic	VM-04								Non-ACM	

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
S4 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Drywall Joint Compound	V2018-0001							Non-ACM		
	Vinyl Floor Tiles 12" x 12"	VM-05							Non-ACM		Not Observed 2018
	Vinyl Floor Tiles 12" x 12"	V2018-0004							Non-ACM		
	Baseboard Mastic	VM-04							Non-ACM		
S3 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Drywall Joint Compound	V2018-0001							Non-ACM		
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos
	Baseboard Mastic	VM-04							Non-ACM		
	Ceiling Tiles	VMDB-03							Non-ACM		No Access Above Not Observed 2018 New Fibreglass Ceiling Tiles
Classroom 7 1st Floor Level	Vinyl Floor Tiles 12" x 12"	VM-05							Non-ACM		Retiled February 2000
	Baseboard Mastic	VM-04							Non-ACM		
	Interior Window Caulking								Non-ACM		New Material
	Vinyl Floor Tiles 9" x 9"		X				X		Assumed	No	Partially Abated/Retiled February 2000 Assumed Asbestos Present in Closet
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Plaster Wall	VMDB-05							Non-ACM		

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 6 1st Floor Level	Ceiling Tiles	VMDB-03							Non-ACM		No Access Above Not Observed 2018 New Fibreglass ACT
	Vinyl Floor Tiles 12" x 12"	VM-05							Non-ACM		Retilled February 2000
	Baseboard Mastic	VM-04							Non-ACM		
	Interior Window Caulking								Non-ACM		New Material
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos Present in Closet
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
Gym 1st Floor Level	Plaster Wall	VMDB-05							Non-ACM		
	Ceiling Tiles	SMDB-01							Non-ACM		
	Interior Window Caulking		X				X		Assumed	No	Assumed Asbestos
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"	VM-05							Non-ACM		Not Observed 2018 New Material
Stage 1st Floor Level	Baseboard Mastic	VM-04							Non-ACM		
	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Drywall Joint Compound	V2018-0001							Non-ACM		
	Vinyl Floor Tiles 12" x 12"	VM-05							Non-ACM		Not Observed 2018 New Material

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible		
Boiler Room/C1/M1 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM	No Access Above
	Plaster	S2018-0002D, E							Non-ACM	
	Fire Door		X					X	Assumed	Assumed Asbestos
	Thermal Insulation Large Pipe Fittings	SMD8-09							20-30% CHR	Abated July 2006
	Thermal Insulation Small Pipe Fittings	VMDB-09							20-30% CHR	Abated July 2006
	Interior Window Caulking		X				X		Assumed	Assumed Asbestos
	Thermal Insulation Pipe Straights								Non-ACM	Fibreglass Insulation
	Thermal Insulation Pipe Straights	SMD8-08							Non-ACM	
	Thermal Insulation Under Boiler Jacket								Assumed	Abated / Removed July 2006
	Ceiling Tiles	SMD8-04							Non-ACM	Not Observed 2018
OF4 1st Floor Level	Ceiling Tiles	S2018-0004B, C							Non-ACM	
	Plaster	S2018-0002C							Non-ACM	
	Upper Plaster Ceiling	VMDB-05							Non-ACM	No Access Above
	Baseboard Mastic	VM-04							Non-ACM	
Electrical Room 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM	No Access Above Not Observed 2018
	Plaster Wall	VMDB-05							Non-ACM	
	Drywall Joint Compound	S2018-0001C							Non-ACM	
	Vinyl Floor Tiles 9" x 9"		X				X		Assumed	Assumed Asbestos
	Baseboard Mastic	S2018-0003C							Non-ACM	
	Baseboard Mastic	VM-04							Non-ACM	

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Outside Storage Room (S2)	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
Staff Room / CH 4 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Plaster Wall	VMDB-05							Non-ACM		
	Ceiling Tiles								Non-ACM		New Material
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos
W3 / W4 1st Floor Level	Baseboard Mastic	VM-04							Non-ACM		
	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Abated Prior 2011 New 12" x 12" Tiles
	Baseboard Mastic	VM-04							Non-ACM		No Access Above
OF10 1st Floor Level	Fire Door								Assumed		Assumed Asbestos Not Observed 2018
	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed		Assumed Asbestos
	Baseboard Mastic	VM-05							Non-ACM		
OF3 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Drywall Joint Compound	V2018-0001							Non-ACM		
	Baseboard Mastic	VM-04							Non-ACM		
	Interior Window Caulking								Non-ACM		New Material
	Fire Door		X					X	Assumed	Yes	Assumed Asbestos
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Material
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S00001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
OF1 (former OF2) 1st Floor Level	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Baseboard Mastic	VM-04							Non-ACM		
	Interior Window Caulking								Non-ACM		New Material
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Not Observed 2018
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Material
OF1 1st Floor Level	Drywall Joint Compound	S2018-00018							Non-ACM		
	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
	Baseboard Mastic	VM-04							Non-ACM		
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos
	Plaster Ceiling	VMDB-05							Non-ACM		No Access Above
Copy Room 1st Floor Level	Drywall Joint Compound	V2018-00001							Non-ACM		
	Baseboard Mastic	VM-04							Non-ACM		
	Vinyl Floor Tiles 12" x 12"								Non-ACM		New Material
	Vinyl Floor Tiles 9" x 9"								Assumed		Assumed Asbestos Not Observed 2018

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V00001)

Designated Substance Management Plan - TABLE # 13

Last Revised: February 11, 2020

Building Name: Margaret D. Bennie Public School

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible		
Classroom 5 1st Floor Level	Ceiling Tiles	VMDB-03								No Access Above New Material
	Baseboard Mastic	VM-Q4								
	Plaster Wall	VMDB-05								
	Chalkboard									
	Interior Window Caulking									New Material
	Vinyl Floor Tiles 12" x 12"									New Material
	Thermal Insulation Pipe Straights & Fittings									Fibreglass Insulation
Classroom 3 1st Floor Level	Ceiling Tiles	VMDB-03								No Access Above New Material
	Vinyl Floor Tiles 9" x 9"		X			X			No	Assumed Asbestos Patches of Newer 12"x12" Floor Tiles Present 2018
	Baseboard Mastic	VM-Q4								
	Chalkboard		X			X			No	Assumed Asbestos
	Interior Window Caulking									New Material
	Plaster Wall	VMDB-05								
	Thermal Insulation Pipe Straights & Fittings									Fibreglass Insulation

Samples analyzed are identified by the prefix 'S' (e.g. S0001)

Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Designated Substance Management Plan - TABLE # 14

Last Revised: February 11, 2020

Building Name: Margaret D. Bennie Public School

Location	Material Examined	Sample Number	Condition			Accessibility			Asbestos Content	Friable (Y/N)	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
Classroom 2 1st Floor Level	Ceiling Tiles	VMDB-03							Non-ACM		No Access Above New Material
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos Repairs: November 2007, June 17, 2008, February 12, 2014 and May 1, 2015
	Baseboard Mastic	VM-04							Non-ACM		
	Chalkboard		X			X			Assumed	No	Assumed Asbestos
	Interior Window Caulking								Non-ACM		New Material
	Black Mastic on Sink		X			X			Assumed	No	Assumed Asbestos
	Plaster Wall	VMDB-05							Non-ACM		
Classroom 1 1st Floor Level	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation
	Ceiling Tiles	VMDB-03							Non-ACM		No Access Above New Material
	Vinyl Floor Tiles 9" x 9"		X			X			Assumed	No	Assumed Asbestos Repaired November 2007
	Baseboard Mastic	VM-04							Non-ACM		
	Chalkboard		X			X			Assumed	No	Assumed Asbestos
	Interior Window Caulking								Non-ACM		New Materials
	Gold Mastic on Sink		X			X			Assumed	No	Assumed Asbestos
	Plaster Wall	VMDB-05							Non-ACM		
	Thermal Insulation Pipe Straights & Fittings								Non-ACM		Fibreglass Insulation

Samples analyzed are identified by the prefix 'S' (e.g. S0001)
Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Designated Substance Management Plan - TABLE # 15

Last Revised: February 11, 2020

Building Name: Margaret D. Bennie Public School

Location	Material Examined	Sample Number	Condition			Accessibility			Friable (Y/N)	Asbestos Content	Comments
			Good	Fair	Poor	Accessible	Rarely Accessible	Not Accessible			
W2/W1 1st Floor Level Washroom in CR1 1st Floor Level	Plaster Ceiling	VMDB-05								Non-ACM	No Access Above
	Ceiling Tiles									Non-ACM	Present in W1 Only
	Ceramic Tile									Non-ACM	
	Ceiling Tiles									Non-ACM	New Material
H1 (CR-1-OF6) 1st Floor Level	Drywall Joint Compound	V2018-0001								Non-ACM	
	Ceiling Tiles	VMDB-03								Non-ACM	New Material
	Plaster	V2018-00002								Non-ACM	
	Thermal Insulation Pipe Straights									Non-ACM	Fibreglass Insulation
Roof Top Exterior / Interior	Thermal Insulation Pipe Fittings	SMD8-10	X					X	Yes	20-30% CHR	Above Ceiling Partially Abated at Boiler Room July 2006
										Non-ACM	New Material
	Vermiculite Inside Exterior Walls		X					X	Yes	Assumed	Assumed Asbestos
	Caulking		X			X			No	Assumed	Assumed Asbestos
	Firestop Materials		X			X			No	Assumed	Assumed Asbestos

Samples analyzed are identified by the prefix 'S' (e.g. S0001)

Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V0001)

Location	Material Examined	Sample Number	Condition			Comments
			Good	Fair	Poor	
Interior/Exterior Throughout	Lead - All Paints & Varnishes		X			Assume Lead-Containing
	Lead - Piping, Machinery, Equipment, Batteries					Assume Lead-Containing
Interior/Exterior Throughout	Silica - All Concrete, Brick, Masonry, Terrazzo, Sand, Ceiling Tiles					Assume Silica-Containing
Art Class/Pottery	Silica - Clay Body 700					Assume Silica-Containing
Interior/Exterior Throughout	Mercury - Some Thermostats, Switches, Batteries, Fluorescent Bulbs					Assume Mercury-Containing

Samples analyzed are identified by the prefix 'S' (e.g. S00001)
 Samples not collected but visually similar to other samples collected are identified by the prefix 'V' (e.g. V00001)

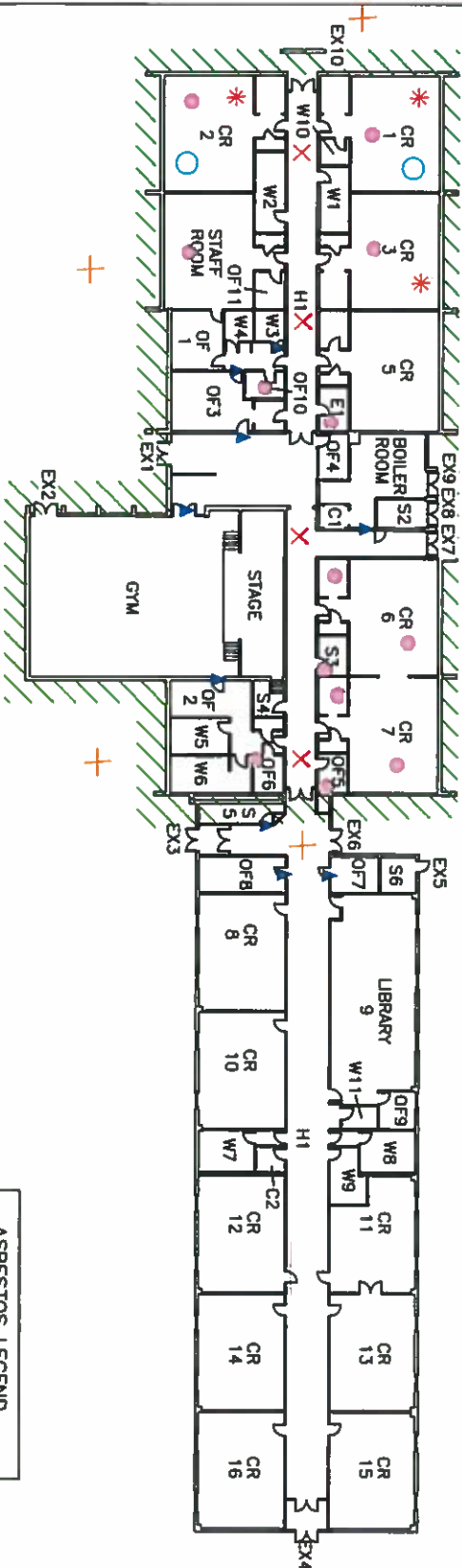
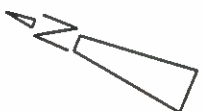
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LEGEND

M = MECHANICAL ROOM
W = WASHROOM
D = DRESSING ROOM
EX = EXIT
S = STORAGE
CR = CLASSROOM
C = CUSTODIAL AREA
H = HALLWAY
OF = OFFICE AREA
E = ELECTRICAL ROOM
B = BOILER ROOM

DESIGNATED SUBSTANCES NOTES:

1. THE BUILDING WAS BUILT PRIOR TO 1980 AND ALL PAINTS AND VARNISHES ARE ASSUMED TO CONTAIN LEAD. ALL PIPING, MACHINERY, EQUIPMENT AND BATTERIES MAY POSSIBLY CONTAIN LEAD.
2. ALL CONCRETE, MASONRY, BRICKS, MORTAR, TERRAZZO, CERAMIC TILE FLOORS AND LIKE MATERIALS ARE ASSUMED TO CONTAIN SILICA.
3. ALL THERMOSTATS, THERMOMETERS, SWITCHES, BATTERIES AND FLUORESCENT LAMP TUBES ARE ASSUMED TO CONTAIN MERCURY.

ASBESTOS LEGEND

✗ THERMAL INSULATION
● FLOOR TILES
▲ FIRE DOOR LINING
* CHALKBOARD & BULLETIN BOARD ADHESIVES
○ SINK MASTIC
▨ VERMICULITE
+ INTERIOR & EXTERIOR CAULKING

NOTE:
ASBESTOS MAY BE IN OR AROUND THE SYMBOL

GREATER ESSEX COUNTY
DISTRICT SCHOOL BOARD

MARGARET D. BENNIE

TITLE:

DESIGNATED
SUBSTANCES

MAIN FLOOR

DRAWN BY:

A.S.

SCALE:

N.T.S.

DATE:

DEC 6, 2019

ADDRESS:

259 SHERK ST
LEAMINGTON, ON.
N8H 3K8

SECTION 02 41 19

Selective demolition

Part 1 General

1.1 Section includes

1. Removal of designated construction.
2. Disposal of materials.
3. Refer to items as indicated on the Demolition Drawings.

1.2 Related requirements

1. Section 02 41 16 - Structure Demolition.

1.3 Alteration project procedures

1. Materials: As specified in Product sections; match existing Products and work for patching and extending work.
2. Employ skilled and experienced installer to perform alteration work.
3. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
4. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to specified condition.
5. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
6. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Consultant for review.
7. Where a change of plane of 6 mm or more occurs, request instructions from Consultant.
8. Patch or replace portions of existing surfaces which are damaged, lifted, discoloured, or showing other imperfections.
9. Finish surfaces as specified in individual Product sections.

1.4 Administrative requirements

1. Sequencing: Sequence work to requirements of Section 01 11 00.
2. Scheduling: Schedule work to requirements of Section 01 31 00.
 - 2.1. Schedule Work to precede new construction.
 - 2.2. Describe demolition removal procedures and schedule.

1.5 Action submittals

1. Section 01 33 00: Submission procedures.
2. Shop Drawings: Indicate removal sequence and location of salvageable items; location and construction of temporary work.

1.6 Informational submittals

1. Section 01 33 00: Submission procedures.

1.7 Closeout submittals

1. Section 01 78 00: Submission procedures.
2. Record Documentation: Accurately record actual locations of capped utilities and subsurface obstructions.

1.8 Regulatory requirements

1. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection.
2. Obtain required permits from authorities.
3. Do not close or obstruct egress width to any building or site exit.
4. Do not disable or disrupt building fire or life safety systems without three (3) days prior written notice to Owner.
5. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.9 Site conditions

1. Conduct demolition to minimize interference with adjacent and occupied building areas.
2. Cease operations immediately if structure appears to be in danger and notify Consultant. Do not resume operations until directed.

Part 2 Products

2.1 Materials

1. Not Used.

Part 3 Execution

3.1 Preparation

1. Provide, erect, and maintain temporary barriers at locations indicated.
2. Erect and maintain weatherproof closures for exterior openings.
3. Erect and maintain temporary partitions to prevent spread of dust, odours, and noise to permit continued Owner occupancy.
4. Protect existing materials which are not to be demolished.
5. Prevent movement of structure; provide bracing and shoring.
6. Notify affected utility companies before starting work and comply with their requirements.
7. Mark location and termination of utilities.
8. Provide appropriate temporary signage including signage for exit or building egress.

3.2 Demolition

1. Disconnect and remove designated utilities within demolition areas.
2. Demolish in an orderly and careful manner. Protect existing supporting structural members.

3. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
4. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
5. Remove temporary Work.

3.3 Schedules

1. Refer to Demolition Drawings for complete scope of demolition work. Coordinate demolition work as may be directed by the General Contractor.

Ω End of Section

SECTION 03 30 00

Cast-in-place concrete

Part 1 General

1.1 Section includes

1. Cast-in-place concrete slabs on grade infill as indicated on the drawings and concrete pads.

1.2 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on joint devices, attachment accessories, admixtures.

1.3 Quality assurance

1. Perform Work in accordance with CSA-A23.1/A23.2.
2. Maintain one (1) copy of document on site.
3. Acquire cement and aggregate from same source for all work.
4. Conform to CSA-A23.1/A23.2 when concreting during hot weather.
5. Conform to CSA-A23.1/A23.2 when concreting during cold weather.

1.4 Coordination and Cooperation

1. Co-ordinate the work of this Section with the work of other sections and advise other trades when materials to be built into the forms will be required.
2. Co-operate with other sections to ensure an uninterrupted sequence of construction.
3. Install any items furnished by others, miscellaneous iron work, anchors, anchor bolts, pipe sleeves, hardware, etc., that are to be built into the concrete work.
4. Form all holes and openings shown or required to accommodate the work of other trades.
5. Make good all openings left in construction around pipes, openings for struts, anchorages, etc. for other trades or where existing concrete must be broken out.

1.5 Design Criteria - Concrete

1. Design all concrete mixes for the compressive strength and slump requirements as specified in "Proportioning" of this section. Allow for the appropriate coefficient of variation for each strength class for the batch plant supplying the concrete.
2. Submit mix designs for each class of concrete for review by the Consultant at least two weeks prior to the commencement of concreting.

1.6 Cold Weather Requirements

1. When air temperature is at or below 5 degrees Celsius or there is a probability of it falling to that limit during the placing or curing period, cold weather requirements shall be applicable and shall be governed by CAN/CSA A23.1 and ACI Standard 306, Recommended Practice for Cold Weather Concreting.
2. Provide heating equipment and enclosures to maintain humidified air within the enclosures to keep the concrete above freezing temperature for seven days. Heating equipment inducing carbon

monoxide gas in the building is not acceptable. Also concrete shall be protected from alternately freezing and thawing for a period of 14 days after placement.

3. When placed, concrete shall have a temperature of not less than 5 degrees C. and not more than 27 degrees C. Accelerators or so called anti-freeze compounds shall not be permitted unless approved in writing by the Consultant. All protective coverings shall be kept clear of the concrete and form surfaces to permit free circulation of air and shall be maintained intact for at least 24 hours after artificial heat is discontinued.
4. Forms must be clean of ice and snow. Use compressed air or other means to remove foreign matter.

1.7 Hot Weather Requirements

1. Hot weather protection shall meet the requirements of CAN/CSA A23.1.
2. When the air temperature exceeds 27 degrees C. hot weather requirements shall be applicable. The time of initial mixing to complete discharge shall not exceed one hour and fifteen minutes. Temperature of concrete as placed shall not exceed 27 degrees C.
3. Concrete forming surfaces and reinforcing steel shall be sprinkled with cool water just prior to placing concrete but no standing water or puddles will be allowed.
4. Slabs shall be kept damp continuously for 24 hours followed by normal curing procedures.
5. Slabs may be cured by the application of a clear pigmented curing compound applied immediately after finishing of slab but before evaporation of surface moisture. The use of water reducing agents must be approved by the Consultant when hot weather conditions prevail.

Part 2 Products

2.1 Concrete materials

1. Hydraulic Cement: CSA-A3000, Type GU; Grey colour.
2. Blended Hydraulic Cement: CSA-A3000, Type GUb; Grey colour.
3. Fine Aggregates: Normal density aggregates, graded to CSA-A23.1/A23.2; maximum aggregate size 10 mm.
4. Coarse Aggregates: Normal density aggregates, graded to CSA-A23.1/A23.2, Group II; maximum aggregate size ..
5. Water: CSA-A23.1/A23.2, clean and not detrimental to concrete.

2.2 Admixtures

1. Chemical admixtures shall be Type 1, Water Reducing Admixtures by Grace.
2. Admixtures to be compatible with the air entraining agent.

2.3 Accessories

1. Vapour Retarder: 0.254 mm thick clear polyethylene film, type recommended for below grade application.

2.4 Joint devices and filler materials

1. Joint Filler Type B: ASTM D1752, Type I - Sponge rubber, resiliency recovery of 90% when compressed to 50% of original thickness, or as required by ASTM D1752.

2.5 Concrete mix

1. Mix and deliver concrete in accordance with CSA-A23.1/A23.2.

2. Job-mixed concrete will not be allowed on this project.
3. Provide mixed-in-transit, ready-mixed concrete in accordance with C.S.A. Standard A23.1, obtained from a supplier approved by the Consultant for use on this project.
4. Mix all concrete with materials so graded and proportioned to produce a plastic mass of such consistency that it will flow slowly under its own weight and which can be readily worked into corners of forms and under and around reinforcing without forming voids or honeycombed surfaces.
5. Furnish to the Sub-Contractor, a "delivery ticket" for each batch of concrete delivered to the site, which shall be kept on record for the inspection of the Consultant. Each ticket shall show the following: Date and truck number, Sub-Contractor's name, Job designation, Specified concrete strength, slump, air content and admixture, Batch volume, and Time of batching.
6. For concrete mixes requiring entrained air, do not pre-mix the air entraining agent with a chemical admixture solution. Where both an air entraining agent and chemical admixture are used, dispense the two materials separately.
7. Accelerating or retarding chemical admixtures shall only be used with the prior approval of the Consultant or at the Consultant's written request. Do not use calcium chloride or products containing calcium chloride.
8. Chemical admixtures and air entraining agents shall be supplied by the same manufacturer and be compatible. Use in strict accordance with the manufacturer's directions.
9. The compressive strength of all concrete is to be determined from test cylinders made in accordance with C.S.A. Standard A23.2.
10. Proportion the materials in accordance with the mix designs supplied under Article 1.7 of this Section to provide the following specified design strengths, slumps and air contents.
11. Use accelerating admixtures in cold weather only when approved by Consultant. Use of admixtures will not relax cold weather placement requirements.
12. Use calcium chloride only when approved by Consultant.
13. Use set retarding admixtures during hot weather only when approved by Consultant.
14. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

2.6 Strength of Concrete

1. Unless otherwise noted compressive strength of concrete at 28 days shall be as per following schedule:
 - 1.1. Slab on Grade (standard)
 - Exposure Class: N
 - Minimum 28 Day Compressive Strength (MPa): 25
 - Slump: 3 1/2" +/-1"
 - Maximum water/cement ratio: 0.45
 - Air Content %: n/a
 - 1.2. Curbs and Sidewalks
 - Exposure Class: C-2
 - Minimum 28 Day Compressive Strength (MPa): 32
 - Slump: 3" +/-1"
 - Maximum water/cement ratio: 0.40
 - Air Content %: 5-8

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify all dimensions and locations required on drawings.
3. Verify requirements for concrete cover over reinforcement.
4. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not impede concrete placement.
5. Verify locations of all openings and embedments required for other architectural, mechanical , and electrical work.

3.2 Preparation

1. Prepare previously placed concrete and apply bonding agent to manufacturer's written instructions.
 - 1.1. Prepare by:
 - 1.1.1. Mechanical roughening.
 - 1.1.2. Cleaning with steel brush.
2. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, with size as shown on Drawings or 3mm larger than dowels. Install adhesive anchors and let set to manufacturer's specifications.
3. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

3.3 Placing concrete

1. Place concrete in accordance with CSA-A23.1/A23.2.
2. Notify Consultant minimum twenty-four (24) hours prior to commencement of operations.
3. Ensure reinforcement, embedded parts, formed expansion/contraction joints are not disturbed during concrete placement.
4. Install vapour retarder under interior slabs on grade. Lap joints minimum 300 mm and seal watertight by taping edges and ends.
5. Repair vapour retarder damaged during placement of concrete reinforcing. Repair with vapour retarder material; lap over damaged areas minimum 150 mm and seal watertight.
6. Separate slabs on grade from vertical surfaces with 13mm thick joint filler.
7. Install joint devices to manufacturer's written instructions.
8. Apply sealants in joint devices in accordance with Section 07 92 00.
9. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
10. Place concrete continuously between predetermined expansion, control, and construction joints.
11. Do not interrupt successive placement; do not permit cold joints to occur.
12. Saw cut joints within twenty-four (24) hours after placing. Use 5 mm thick blade, cut minimum 1/4 depth of slab thickness.
13. Screed slabs on grade level, maintaining surface flatness to either:
 - 13.1. CSA-A23.1/A23.2.
 - 13.2. Maximum 6 mm in 3 m.

3.4 Concrete finishing

1. Provide formed concrete surfaces to be left exposed with smooth rubbed finish as Scheduled in this Section.
2. Steel trowel surfaces which will receive resilient flooring, thin set quarry tile, seamless flooring, thin set ceramic tile, and carpeting.
3. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at nominal 1:50.

3.5 Curing and protection

1. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical damage.
2. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
3. Spraying: Spray water over floor slab areas and maintain wet cure for seven (7) days.

3.6 Cold Weather Concreting

1. All concreting operations during cold weather in accordance with C.S.A. A23.1. Carefully protect all corners and edges.
2. Exercise particular care to ensure that previously placed concrete and reinforcing steel are adequately heated to prevent freezing of new concrete placed directly against it.
3. Exercise care to avoid rapid temperature changes (thermal shock) when removing an area from temporary heating conditions.
4. Remove and replace all concrete damaged by frost or freezing at the direction of the Consultant at no cost to the Owner.
5. Accelerating chemical admixtures shall not be used without the written approval of the Consultant.

3.7 Hot Weather Concreting

1. All concreting operations during hot weather in accordance with C.S.A. A23.1.
2. Take special care to prevent surface crazing of floor slabs due to combined high temperatures and drying winds.
3. The use of a water reducing-retarding chemical admixture in the concrete mix may be required at the Consultant's discretion.

3.8 Finishing of Horizontal Surfaces

1. Type 1 Standard Floors: Refer to or Comply with A.C.I. Standard 302 for recommended procedure for concrete floor and slab construction and finishing.
2. Refer to or Comply with A.C.I. Standard 301, Specification for Structural Concrete. Maintain surface tolerances for all slabs in accordance with Section 11.9 of that Standard for Class A tolerance.
3. Concrete floors which are to receive rubber tile or ceramic tile toppings shall be screeded level, floated and, after attaining a partial set, brushed with a course wire broom to remove laitance and to score the surface to assure bond of the topping. Co-ordinate the location of floor toppings with the drawings.

3.9 Joint Fillers

1. Furnish filler for each joint in single piece for depth and width required for joint, unless otherwise authorized by Consultant. When more than one piece is required for a joint, fasten abutting ends and hold securely to shape by stapling or other positive fastening.
2. Locate and form isolation, construction and expansion joints as indicated. Install joint filler.
3. Use ½" thick joint filler to separate slabs on grade from vertical surfaces and extend joint filler from bottom of slab to within ½" of finished slab surface unless indicated otherwise.

3.10 Finishes

1. Concrete floor finish tolerance shall be in accordance with CAN/CSA-A23.1 and shall have a classification of "Flat" using the straight edge method; or when measured in accordance with CSA Test Method A23.2-83, shall have a minimum FF = 30 and FL = 20 as these F numbers relate to floor flatness and levelness respectively.

3.11 Construction Joints

1. Construction joints in walls and floors shall be placed in locations approved by the Consultant or shown on the drawings. Construction joints shall be keyed and dowelled to the adjoining pour as detailed on the drawings.
2. Before placing adjoining concrete at construction joints, clean the existing surface of dirt, laitance and loose aggregate. Where additional resistance to horizontal shear is required, mortises or keys shall be formed in the concrete. The pouring sequence and the location of construction joints shall be as shown on the plans, noted herein, or as approved by the Consultant.

3.12 Treatment & Repairs for Formed Surfaces

1. After removal of forms, the surfaces of concrete are to be given one or more of the finishes specified hereafter. Methods used are to be in accordance with C.S.A. A23.1.
2. When, in the opinion of the Consultant, satisfactory repairs cannot be made, then the defective work is to be cut out and replaced as directed by the Consultant.
3. Treatment of honeycombed areas is to be carried out as directed by the Consultant. Do not treat such areas prior to receiving instructions from the Consultant.
4. Patch tie holes and other defects (unless otherwise directed by the Consultant as noted in paragraphs 2 and 3 above). Remove fins exceeding 5mm (3/16") in height.
5. All necessary patching shall have been done immediately after the forms have been removed. All surfaces are to be given a light surface grind with a power rotary grinder to remove all fins, ridges, and other imperfections. Follow the preparation, application, materials, and curing procedures of 24.3.c of C.S.A. Standard A23.1.

3.13 Field quality control

1. Provide free access to Work and cooperate with appointed firm.
2. Submit proposed mix design of each class of concrete to inspection/testing firm for review prior to commencement of Work.
3. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
4. Three (3) concrete test cylinders will be taken and tested for every 75 cu m or less, of each class of concrete placed.
 - 4.1. Minimum one (1) test per day.

- 4.2. One (1) test per type of component, walls and slabs.
- 5. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- 6. One slump or flow test and one air test will be taken for each set of test cylinders.

3.14 Patching

- 1. Allow Consultant to inspect concrete surfaces immediately upon removal of forms.
- 2. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Consultant upon discovery.
- 3. Patch imperfections as directed.

3.15 Defective concrete

- 1. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- 2. Repair or replacement of defective concrete will be determined by the Consultant.
- 3. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Consultant for each individual area.

Ω End of Section

SECTION 05 50 00

Metal fabrications

Part 1 General

1.1 Section includes

1. Provide labour, material, equipment, supervision and incidental services as necessary to complete all metal fabrications work required as indicated on the drawings and specified herein, including but not limited to:
 - .1 Steel lintels, misc. steel framing, angles, etc. as detailed on architectural drawings.
2. Steel anchors, angle support, brackets, miscellaneous framing etc. as required for the support and installation of new mechanical equipment.
3. Shop fabricated miscellaneous metal items.

1.2 Related requirements

1. Section 03 30 00 - Cast-in-place Concrete: Placement of metal fabrications in concrete.
2. Section 05 12 00 - Structural Steel: Structural steel column anchor bolts.
3. Section 09 91 00 - Painting: Paint finish.

1.3 Action submittals

1. Section 01 33 00: Submission procedures.
2. Shop Drawings:
 - 2.1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 - 2.2. Indicate welded connections using standard welding symbols. Indicate net weld lengths.

1.4 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.5 Quality assurance

1. Welders' Certificates: Submit to Section 01 33 00 requirements, certifying welders employed on the Work, verifying qualification within the previous twelve (12) months to CSA-W47.1 (steel).
2. Welded Steel Construction: CSA-W59.
3. Welded Aluminum Construction: CSA-W59.2.
4. Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the place where the Project is located.

Part 2 Products

2.1 Materials - steel

1. Steel Sections and Plates: CSA-G40.20/G40.21, Grade 350W.
2. Steel Pipe: ASTM A53/A53M, Grade A, Schedule 40, standard weight, galvanized finish.
3. Steel Tubing: ASTM A500/A500M, Grade B, galvanized finish.

4. Fasteners: as required.
5. Bolts, Nuts, and Washers: ASTM A307, galvanized to ASTM A153/A153M for galvanized components.
6. Welding Materials: Type required for materials being welded.
7. Welding Filler Material: CSA-W48.
8. Shop and Touch-Up Primer: SSPC-Paint 25, zinc oxide, alkyd.
9. Primer: As specified in Section 09 91 00.
10. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type II - Organic zinc-rich primer.

2.2 Fabrication

1. Fit and shop assemble items in largest practical sections, for delivery to site.
2. Fabricate items with joints tightly fitted and secured.
3. Continuously seal joined members by continuous welds.
4. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
5. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
6. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3 Fabrication tolerances

1. Squareness: 3 mm maximum difference in diagonal measurements.
2. Maximum Offset Between Faces: 1.6 mm.
3. Maximum Misalignment of Adjacent Members: 1.6 mm.
4. Maximum Bow: 3 mm in 1.2 m.
5. Maximum Deviation From Plane: 1.6 mm in 1.2 m.

2.4 Finishes - steel

1. Prepare surfaces to be primed in accordance with SPCC SP 2.
2. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
3. Do not prime surfaces in direct contact with concrete or where field welding is required.
4. Prime paint items with two (2) coats.
5. Structural Steel Members: Galvanize after fabrication appropriate grade for type and size of steel material indicated, with zinc coating thickness ASTM A123/A123M.
6. Non-structural Items: Galvanized after fabrication to appropriate grade for type and size of steel material indicated, with zinc coating thickness ASTM A123/A123M.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that field conditions are acceptable and are ready to receive work.
3. Verify dimensions, tolerances, and method of attachment with other work.

3.2 Preparation

1. Clean and strip primed steel items to bare metal where site welding is required.
2. Supply steel items required to be cast into concrete with setting templates to appropriate sections.

3.3 Installation

1. Install items plumb and level, accurately fitted, free from distortion or defects.
2. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
3. Field weld components indicated on Shop Drawings.
4. Perform field welding to CSA requirements.
5. Obtain approval prior to site cutting or making adjustments not scheduled.
6. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

3.4 Erection tolerances

1. Section 01 73 00: Tolerances.
2. Maximum Variation From Plumb: 6 mm per story, non-cumulative.
3. Maximum Offset From True Alignment: 6 mm.
4. Maximum Out-of-Position: 6 mm.

3.5 Schedules

1. The following Schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.
2. Lintels: As detailed; galvanized finish.

Ω End of Section

SECTION 06 10 00

Rough carpentry

Part 1 General

1.1 Section includes

1. Miscellaneous rough carpentry, including:
 - 1.1. Rooftop equipment curbs and bases.
 - 1.2. Wood blocking.
 - 1.3. Wood furring.
 - 1.4. Wood sleepers.
2. Fasteners.
3. Installation of Door Hardware as specified in Section 08 71 00 - Door Hardware.
4. Installation of Miscellaneous Items supplied by Owner:

1.2 Related requirements

1. Section 08 11 13 - Metal Doors and Frames: Door openings to receive wood blocking.

1.3 Quality assurance

1. Perform Work in accordance with the following agencies:
 - 1.1. Lumber Grading Agency: Certified by NLGA Grading Rules.
 - 1.2. Plywood Grading Agency: Certified by CANPLY.
 - 1.3. Wood Based Panel Products: Marked with a recognized, visible grade stamp showing Grade or span rating as required.
2. Pressure Preservative Treated Wood: Marked with certification mark authorized by the Canadian Wood Preservers Bureau (CWPB) indicating producer, preservative type, retention and Use Category (UC).

1.4 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Store plywood panels flat and level.
3. Keep finish faces inward and cover stacks to protect from bumping and abrasion.
4. Protect tongue and groove plywood panel edges and corners.
5. Protect panels from sunlight, water or excessive humidity.
6. Store materials off the ground, covered with weatherproof tarps.

Part 2 Products

2.1 Lumber materials

1. Dimension Lumber: CSA-O141, softwood lumber unless indicated otherwise, S4S, maximum moisture content 19%; graded to NLGA Grading Rules Standard Grading Rules for Lumber. Finger jointed lumber not acceptable.

- 1.1. Furring Blocking Nailing Strips Grounds and Rough Bucks Cants Curbs: Grade Standard, species: any species; exterior wood pressure preservative treated.

2.2 Panel materials

1. Plywood: CSA-O121 as indicated in schedule below, CANPLY certified and graded, meeting the requirements of CSA-O325.

2.3 Fasteners and anchors

1. Screws and Nails: Galvanized steel; type and size suitable for application.
2. Anchors: Galvanized steel; bolt or ballistic fastener for anchorages to steel.

2.4 Miscellaneous accessories

1. Sill Gasket (top of foundation wall): 6 mm, as indicated thick, plate width Closed cell polyethylene foam.
2. Flexible Flashing: Rubberized-asphalt compound, self-adhesive, bonded to a high-density, polyethylene film, minimum thickness 0.64 mm. Compatible primer recommended by membrane manufacturer.
3. Adhesives: Waterproof adhesive, approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

2.5 Preservative treatment

1. Wood Preservative (Pressure Treatment): CAN/CSA-O80, and in accordance with Table 2 - Use Categories for Specific Products, Uses, and Exposures.
 - 1.1. UC3.1: Exterior construction, protected, above-ground applications (coated millwork, cants, siding, trim); use waterborne alkali-based, type ACQ.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that site conditions are ready to receive work and opening dimensions are as instructed by the manufacturer.

3.2 Framing

1. Place sill gasket directly on cementitious foundation. Puncture gasket clean and fit tight to protruding foundation anchor bolts.
2. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.
3. Coordinate curb installation with installation of parapet construction.

3.3 Flexible flashing

1. Install flexible flashing to manufacturer's written instructions.
2. Lap seams and junctions with other materials minimum 100 mm.
3. Lap flashing over sheathing paper at bottom and sides of wall openings; lap sheathing paper over flashing at head of wall openings

3.4 Site applied wood treatment

1. Apply preservative treatment to manufacturer's written instructions.
2. Brush apply two (2) coats of preservative treatment on wood requiring cutting or drilling after treatment and on wood in contact with cementitious materials.
3. Allow preservative to dry prior to erecting members.

3.5 Erection tolerances

1. Section 01 73 00: Tolerances.
2. Framing Members: 6 mm from true position, maximum.

Ω End of Section

SECTION 06 41 00

Architectural wood casework

Part 1 General

1.1 Section includes

1. Cabinet units.
2. Countertops.
3. Cabinet hardware.

1.2 Related requirements

1. Section 06 10 00 - Rough Carpentry: Grounds and support framing.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Pre-installation Meetings: Convene one (1) week before starting work of this section.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data:
 - 2.1. Provide data for hardware accessories.
 - 2.2. Provide data on fire retardant treatment materials and application instructions.
3. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.
4. Samples:
 - 4.1. Submit two (2) samples, 200 mm x 200 mm in size, illustrating casework finish.
 - 4.2. Submit two (2) samples, 200 mm x 200 mm in size, illustrating countertop finish.
 - 4.3. Submit two (2) samples of hinges and drawer pulls, illustrating hardware finish.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Provide application instructions.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Perform fabrication and installation to AWS, Premium grade.
 - 1.1. Kitchen Cabinets: Premium quality.
2. Manufacturers Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience and a member in good standing with AWMAC.

3. Installers Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the fabricator.

1.8 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Deliver materials after area of operation is fully enclosed; plaster and concrete work dry and area broom clean.
3. Protect units from moisture damage as specified in AWS.

1.9 Site conditions

1. Ambient Conditions:
 - 1.1. Maintain indoor temperature and humidity during and after installation within range recommended by AWS for location of the project.

Part 2 Products

2.1 Description

1. Regulatory Requirements:
 - 1.1. Conform to applicable code for fire retardant requirements.

2.2 Lumber materials

1. AWS Lumber: Maximum moisture content of Hardwood, lumber grades as required for 9% grade specified.

2.3 Sheet materials

1. Wood Sheet Materials: Panel grades as required for AWS grade specified.
 - 1.1. Particleboard: NPA A208.1; composed of wood chips, medium density, moisture resistant; of grade to suit application; sanded faces.
 - 1.2. Medium Density Fibreboard (MDF): NPA A208.2; composed of wood fibres, made with binders containing no urea-formaldehyde resin, moisture resistant; of grade to suit application; sanded faces.
 - 1.3. Medium Density Overlaid (MDO): Plywood with heat and pressure bonded resin overlay.
 - 1.4. Hardboard: ANSI A135.4; heat and pressure consolidated inter-felted lignocellulosic fibreboard, unperforated, Standard grade, S1S, thickness 6 mm.
2. Plywood for drawer box construction shall be Baltic Birch Plywood in accordance with CSA Standard 0153. Grade A G.2.S. Thickness as detailed.
3. Doors and drawer fronts, exposed gables etc, shall be composite panel flat cut birch veneer facs (CW@) with inner ply veneer under neath over wafer board core, equal to "multi-core" by Longlac Wood Industries Inc., with matching hardwood edging for all for sides.
4. Cabinet exterior, interior and shelving construction:
 - 4.1. Hardwood plywood to CSA 0115, Type II, exposed face veneer AWMAC architectural grade flat cut birch.
 - 4.2. Shelves: (exposed shelves flat cut, interior not exposed rotary cut). All interior and/or exposed shelves will be constructed of 19mm (3/4") thick birch face veneer cor plywood (CW@) with matching hardwood edging (rounded) on all four sides.

4.3. Interior: (exposed shelves flat cut, interior not exposed rotary cut). Gables and dividers to consist of 19mm (3/4") thick birch face particle core plywood (CW2 or CW4 as it applies). Cabinet backs to be made from 3/8" thick birch face veneer core plywood (CW4). Cabinet backs to be dadoed into cabinet box on all four sides.

4.4. Edging: all edges to be finished with laminated 3mm (1/8") birch edging with 3mm (1/8") bullnosed edge profiles.

2.4 Plastic laminate materials

1. High Pressure Decorative Laminate (HPDL): NEMA LD 3, Class 1 flame spread rated, minimum 0.7 mm thick.
2. Laminate Backing Sheet (BKL): NEMA LD 3, 0.5 mm thick, Class 1 flame spread rated, undecorated, colour white.

2.5 Edgebands

1. Wood Edgeband: Hardwood edgeband, of same species and cut as exposed surfaces.

2.6 Accessories

1. Adhesive: Type recommended by AWS to suit application.
2. Fasteners: Stainless steel, type 304, of size and type to suit application.
3. Tape: Aluminum foil, insulating and heat dissipating tape.

2.7 Hardware

1. Equivalent hardware from other manufacturers may be acceptable subject to the approval of the Architect of samples and a list of items proposed. Submit samples of all items specified finish to the Consultant to accompany any proposal for substitution. Hardware shall not be ordered from the manufacturer until the samples have been approved by the Architect and the hardware and finishes supplied shall be identical to the approved samples.
2. Hardware: Meeting the requirements of AWS for grade specified.
 - 2.1. Finish - Exposed Hardware: brushed nickel.
 - 2.2. Finish - Semi-Exposed Hardware: Manufacturer's standard finish.
3. Drawer and door pulls general: Stanley 4883 1/2 (C26D finish), CBH 220 3 1/2 (C26D finish) or Richelieu 33204(195 finish).
4. Shelf standards and supports - provide adjustable shelving with 5mm holes at 38mm c/c using Hafele 282.11.710 steel support clips with steel pins (twin-pin locking).
5. Drawer slides: Hettich #KA5632 or Accu-Ride #3832. To suite drawer depth, lengths as required, and single extension only.
6. Cabinet Locks: locks for 3/4" cabinet doors/drawers shall be Richelieu BP140100140 or Hafele C Series C8073-14A, polished nickel finish. Cam rotation and key removal position to suit installation location. Provide locks for all tall cabinet doors throughout, and cabinets as noted on the drawings. All cabinets are to be keyed alike within the office building.
7. Catches: K & V 918, aluminum, magnetic
8. Elbow Catches – Ives 2 A92.
9. Fully concealed hinges for 3/4" cabinet doors: Full overlay door hinges shall be Blum #75M55 clip-on, zinc die cast, self-closing, 125 degree Opening with die cast mounting plates #173L810. Screws for hinge and mounting plates Blum System Screws No. 661.130 – 2G.
 - .1 Two hinges per leaf – for doors up to 36" in height

- .2 Three hinges per leaf – for doors over 36" to 48" in height
- .3 Four hinges per leaf – for doors over 48" in height.
- 10. Bumpers for ¾" cabinet doors shall be Richelieu BP 303-11, clear nylon, all doors.
- 11. Installation screws: type suitable for substrate to which cabinet is installed and with chrome plated cup washers.
- 12. Tight joint fasteners: KV513 or KV 516.
- 13. Chair braces: Stanley 996 ½ - 1" x 1" – ZC
- 14. Levellers: Richelieu 539030.
- 15. Coat Hooks for Change Room shelves and other locations noted on the drawings shall be CBH 61 (26D) or No. 209 (Bright Zinc Plated Steel) Manufactured by Royal Arch Inc. w/ 2" x 4" H x 1/8" anodized aluminum plate connected with thru-bolts.
- 16. Cable entry plugs: Richelieu 62.2700.90 or Hafele 429.99.333
- 17. Casters: Colson 1-3356-91 (where specified).
- 18. Piano hinges: Stanley 314-C26D or Hafele 351.09.633 (where noted on drawings).

2.8 Wood casework

- 1. Casework Construction: Meeting AWS, Premium grade.
 - 1.1. Type: Face framed, reveal overlay cabinet and door interface.

2.9 Plastic laminate countertops

- 1. Meeting the requirements of AWS Quality Standards, Premium grade for counter construction supplemented as follows:
- 2. High Pressure Decorative Laminate (HPDL): Printed pattern colour range, with satin finish.
- 3. Postformed Laminate: HPDL, printed pattern colour range, with satin finish.
- 4. Core Material: Particleboard.
 - 4.1. Wet Tops: Water resistant particleboard.
- 5. Backsplash: Butt joint style, height 100 mm.
- 6. Edge Treatment: No-drip bullnose edge, edge thickness 32 mm.

2.10 Fabrication

- 1. Shop prepare and identify components for matching during site assembly.
- 2. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.
- 3. When necessary to cut and fit on site, provide materials with ample allowance for site cutting and scribing.
- 4. Provide separate toe kick assemblies for all base cabinets constructed of 3/4" plywood.

2.11 Wood finishes

- 1. Factory Finishing System: to match grade of product to be finished.
 - 1.1. Transparent Finishing Systems: System 1 - Lacquer (nitrocellulose).
 - 1.2. Sheen: Satin.
- 2. Site Finishing: Site finished as specified in Section 09 91 00 as scheduled.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that field measurements are as indicated on Shop Drawings.
3. Verify adequacy of backing and support framing.
4. Verify mechanical, electrical, plumbing, HVAC and other building components, affecting work in this Section are in place and ready.

3.2 Installation

1. Install Work to AWS, grade as indicated.
2. Set and secure casework in place; rigid, plumb, and level.
3. Use fixture attachments in concealed locations for wall mounted components.
4. Use concealed joint fasteners to align and secure adjoining cabinet units.
5. Carefully scribe casework abutting other components, with maximum gaps of 1 mm. Do not use additional overlay trim for this purpose.
6. Secure casework to floor using appropriate angles and anchorages.
7. Countersink mechanical fasteners used at exposed and semi-exposed surfaces, excluding installation attachment screws and those securing casework end to end.
8. Cut equipment cutouts shown on plans using templates provided.

3.3 Adjusting

1. Test installed work for rigidity and ability to support loads.
2. Adjust hardware to function smoothly and correctly.
3. Fill and retouch nicks, chips and scratches; replace unrepairable damaged items.

3.4 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Clean casework, counters, glass, hardware, fittings, and fixtures of dust, pencil and ink marks and broom clean the area of operation.

Ω End of Section

SECTION 07 21 13

Board insulation

Part 1 General

1.1 Section includes

1. Board insulation and integral vapour retarder at perimeter foundation wall and underside of floor slabs.

1.2 Related requirements

1. Section 07 21 16 - Blanket Insulation.
2. Section 07 26 00 - Vapour Retarders: Vapour retarder materials to adjacent insulation.
3. Section 07 27 00 - Air Barriers: Air seal materials to adjacent insulation.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the work with Section 07 26 00 for installation of vapour retarder and Section 07 27 00 for air seal materials.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on product characteristics.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Indicate special environmental conditions required for installation and installation techniques.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Site conditions

1. Ambient Conditions:
 - 1.1. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

Part 2 Products

2.1 Manufacturers - insulation materials

1. Acceptable Material: Styrofoam SM as manufactured by Dow, or Celfort 300 as manufactured by Celfortec, or Consultant approved equal.

2.2 Insulation materials

1. Moulded Polystyrene Insulation (EPS): CAN/ULC-S701, Type 4, Type 3 for perimeter foundation walls; polystyrene board, with the following characteristics:
 - 1.1. Compressive Strength: Minimum 210 kPa.
 - 1.2. Thermal Resistance: RSI-0.87 per 25mm.
 - 1.3. Water Absorption: 0.7% by volume maximum.
 - 1.4. Board Size: 610mm x 2440mm.
 - 1.5. Board Thickness: 50mm.
 - 1.6. Board Edges: Shiplapped.

2.3 Adhesive materials

1. Adhesive Type 1: Type recommended by insulation manufacturer for application.

2.4 Accessories

1. Sheet Vapour Retarder: Specified in Section 07 26 00.
2. Tape: Polyethylene self-adhering type, mesh reinforced, 50 mm wide.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.
3. Verify substrate surface is flat, free of materials or substances that may impede adhesive bond.

3.2 Installation - under concrete slabs

1. Place insulation under slabs on grade after base for slab has been compacted.
2. Cut and fit insulation tight to protrusions or interruptions to the insulation plane.
3. Prevent insulation from being displaced or damaged while placing slab.
4. Lay 100mm (4") rigid insulation to underside of concrete sidewalks at exterior doors as outlined on the drawings. Insulation shall be across full width of door opening plus 610mm (2'-0") on each side, and shall extend 2440mm (8'-0") minimum beyond face of door wall unless noted otherwise on the drawings. Refer to drawings for details and locations. Stagger all joints

3.3 Protection

1. Section 01 78 23: Protecting installed work.
2. Do not permit work to be damaged prior to covering insulation.

Ω End of Section

SECTION 07 21 16

Blanket insulation

Part 1 General

1.1 Section includes

1. Batt insulation and vapour retarder in exterior wall construction.
2. Blanket/Roll insulation for filling perimeter window and door shim spaces, and crevices in exterior wall and roof.

1.2 Related requirements

1. Section 07 21 13 - Board Insulation.
2. Section 07 26 00 - Vapour Retarders: Vapour retarder materials to adjacent insulation.
3. Section 07 84 00 - Firestopping.
4. Section 09 21 16 - Gypsum Board Assemblies: Acoustic insulation.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the work with Section 07 26 00 for installation of vapour retarder and Section 07 27 00 for air seal materials.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on product characteristics.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

Part 2 Products

2.1 Description

1. System Description: Assembly of materials providing:
 - 1.1. Thermal protection to vapour retarder in conjunction with vapour retarder materials in Section 07 26 00.

2.2 Materials

1. Thermal Batt and blanket mineral fibre: to CAN/ULC-S702-09, Type 1, thickness as indicated. Flame/Smoke Properties: CAN/ULC-S102-10. Acceptable material: Fiberglas Pink Insulation as manufactured by Owens Corning, or Roxul Plus as manufactured by Roxul Inc. or Consultant approved equal.
2. Acoustic Batt and blanket mineral fibre: to ASTM-C612-14, thickness as indicated. Acceptable material: Quiet Zone Acoustical Batts as manufactured by Owens Corning, Noise Stop flexible sound board as manufactured by Roxul Inc., Sound Attenuation Batt (SAFB) Insulation as manufactured by Fibrex, or Consultant approved equal.
3. Sheet Vapour Retarder: clear polyethylene film for above grade application, 6 mil thick.
4. Staples: Steel wire; electroplated; type and size to suit application.
5. Tape: Polyethylene self-adhering type, mesh reinforced, 50 mm wide.
6. Insulation Fasteners: Steel impale spindle and clip on flat metal base, self adhering backing, length to suit insulation thickness, capable of securely and rigidly fastening insulation in place.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.

3.2 Installation

1. Install insulation and vapour retarder to manufacturer's written instructions and Section 07 26 00.
2. Install in exterior walls spaces without gaps or voids. Do not compress insulation.
3. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
4. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within the plane of insulation.
5. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
6. Metal Framing: Place vapour retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
7. Extend vapour retarder tight to full perimeter of adjacent window and door frames and other items interrupting the plane of membrane. Tape seal in place.
8. Coordinate work of this section with construction of vapour retarder specified in Section 07 26 00.

Ω End of Section

SECTION 07 26 00

Vapor retarders

Part 1 General

1.1 Section includes

1. Sheet and sealant materials for controlling vapour diffusion.

1.2 Related requirements

1. Section 07 21 13 - Board Insulation: Insulation and vapour retarder.
2. Section 07 92 00 - Joint Sealants: Sealants.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination: Coordinate with other work having a direct bearing on work of this section.
3. Sequencing:
 - 3.1. Sequence Work to permit installation of materials in conjunction with other retardant materials and seals, and air barrier assemblies.
 - 3.2. Do not install vapour retarder until items penetrating it are in place.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data indicating material performance criteria.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements, including preparation and installation requirements, techniques.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Perform Work in accordance with SWRI requirements for installation. Maintain one (1) copy of document on site.

Part 2 Products

2.1 Sheet materials

1. Sheet Retarder: Clear polyethylene film for above grade application, 6mil thick. Location: Typical Exterior Stud Wall Assembly.
2. Sheet Retarder: Green polyethylene film for below grade application, 10mil thick. Location: Below Slab on Grade.

2.2 Accessories

1. Tape: Polyethylene self-adhering type, mesh reinforced, 50 mm wide, compatible with sheet material.
2. Electrical Vapour Barrier Box: Rigid, moulded polyethylene box with reinforced flanges.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify condition of substrate and adjacent materials.

3.2 Preparation

1. Remove loose or foreign matter which might impair adhesion.
2. Clean and prime substrate surfaces to receive adhesive in accordance with manufacturers' written instructions.

3.3 Installation

1. Install materials to manufacturer's written instructions.
2. Vapour Retarder For Stud Framed Walls: Secure sheet barrier type - to stud faces with adhesive. Lap edges over stud faces, lap ends onto adjacent construction; caulk ends with type adhesive sealant to ensure complete seal.
3. Vapour Retarder Seal For Openings: Install sheet barrier type - between window frames and adjacent vapour retarder and seal with adhesive. Caulk with Type compatible sealant to ensure complete seal. Position laps over firm bearing.
4. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges or where compatibility with adjacent materials may be in doubt.
5. Vapour Barrier Box: Install vapour barrier boxes at electric outlet and switch locations on exterior walls. Lap and seal perimeter with sheet barrier.

Ω End of Section

SECTION 07 54 00

Membrane Roofing

Part 1 General

1.1 Section includes

1. Existing roofing membrane patch work in areas of new mechanical equipment installations.

1.2 Related requirements

1. Section 06 10 00 - Rough Carpentry: Wood nailers and cant strips.
2. Section 07 62 00 - Sheet Metal Flashing and Trim: Counter flashing and trim.
3. Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC): Prefabricated curb for mechanical equipment.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the work with the installation of associated metal flashings, as the work of this section proceeds.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide characteristics of roof membrane.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirement, including special precautions required for seaming the membrane.

1.6 Quality assurance

1. Perform Work to CRCA Roofing Specifications Manual. Maintain a copy of document on site.

1.7 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Deliver roofing materials in original, unopened containers, complete with labels indicating manufacturer's name, product brand name, date of manufacture, approval or listing agency markings, usage instructions and safety precautions.

1.8 Site conditions

1. Ambient Conditions:
 - 1.1. Do not apply roofing membrane during inclement weather or when ambient temperatures are above or below material manufacturer's recommendations.

- 1.2. Do not apply roofing membrane to damp or frozen deck surface.
- 1.3. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.9 Warranty

1. The existing warranties for the roof membrane systems shall remain intact. The original installer shall be used for the roofing work and shall maintain roof system manufacturer's warranty.

Part 2 Products

2.1 Description

1. System Description:
 - 1.1. The existing roof system at MD Bennie is as follows:
 - 1.1.1. Area B: existing 2-ply modified bitumen roofing completed in 2008 (Soprema) was repaired in 2015 by adding a prime cold top pour and pea gravel (Tremco).
 - 1.1.2. Area C: existing 2-ply modified bitumen roofing completed in 2008 (Soprema) was repaired in 2015 by adding a prime cold top pour and pea gravel (Tremco).
 - 1.1.3. Gillett Roofing Inc. of Leamington, Ontario was the roofing contractor that completed roof installation work in 2008 and in 2015, and holds the 10 year warranty on the roof system. All new roof work to be completed as part of this project must be completed by Gillett Roofing Inc. to maintain the warranty.
 - 1.2. The existing roof system at Harrow Public School is as follows:
 - 1.2.1. Area E: 3-ply cold adhesive Burmastic (Tremco) roofing completed in 2014.
 - 1.2.2. Gillett Roofing Inc. of Leamington, Ontario was the roofing contractor that completed roof installation work in 2014, and holds the 20 year warranty on the roof system. All new roof work to be completed as part of this project must be completed by Gillett Roofing Inc. to maintain the warranty.

2.2 Membrane materials

1. All membrane materials, insulation, vapour retarder, and accessories shall be part of the roofing system noted paragraph 2.1 of this section to maintain the existing warranty for the roof system.

2.3 Miscellaneous accessories

1. Sealants, Primers and Cleaners: As recommended by membrane manufacturer.
2. Metal Counterflashing and Cap Flashing: Prefinished sheet metal, as specified in Section 07 62 00.
3. Reglets and Pressure Bars:; maximum possible lengths per location, with attachment flanges.
4. Prefabricated Roof Specialties: shall be as noted on the Roof Plan and Roof Plan Details.

Part 3 Execution

3.1 Examination

1. Verify openings and penetrations are in place, curbs and nailers are in place and drain bodies are securely clamped.
2. Verify that surfaces, planes and slopes are as specified and ready to receive work.
3. Verify steel deck is supported and secured.

4. Verify deck surfaces are dry and free of snow or ice.

3.2 Preparation

1. Clean deck of dust, debris, sharp objects and other substances in accordance with roofing manufacturer's requirements.
2. Prevent debris from entering or clogging roof drains and other openings; remove roof drain plugs when no work is taking place or when rain is forecast.

3.3 Membrane application

1. Apply membrane and mechanical attachment devices to manufacturer's written instructions.
2. Align membrane, maintaining uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
3. Extend membrane up vertical surfaces minimum of 150 mm.
4. Cut and seal membrane around roof penetrations, tie-ins and other interfaces using manufacturer's recommended details and securement methods.

3.4 Flashings and accessories

1. Install roofing accessories to manufacturer's written instructions.
2. Adhere flexible flashings and preformed flashing accessories with bonding adhesive at the required rate, to membrane manufacturer's written instructions. Reinforce with mechanical fasteners as required.
3. Seal flashings and flanges of items penetrating membrane.

3.5 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. In areas where finished surfaces are soiled by Work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
3. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.6 Protection

1. Section 01 78 23: Protecting installed work.
2. Protect membrane from damage and wear during remainder of construction period where traffic must continue over finished roof membrane.
3. Protect adjacent building surfaces against damage from roofing work.

Ω End of Section

SECTION 07 62 00

Sheet metal flashing and trim

Part 1 General

1.1 Section includes

1. Metal lintel flashings.
2. Metal counterflashings.

1.2 Related requirements

1. Section 06 10 00 - Rough Carpentry: Wood blocking and curbing for metal roofing substrate profiles.
2. Section 07 92 00 - Joint Sealants.
3. Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC): Prefabricated curb for mechanical equipment.
4. Division 26 - Electrical: Flashing sleeves and collars for electrical items protruding through roofing membrane.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
3. Samples:
 - 3.1. Submit two (2) samples 150mm x 150mm in size illustrating metal finish colour.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Perform Work to CRCA manual for standard details and requirements. Maintain a copy of document on site.
2. Fabricator Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

3. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.8 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
3. Prevent contact with materials which may cause discolouration or staining.

Part 2 Products

2.1 Sheet materials

1. Pre-Coated Galvanized Steel: ASTM A653/A653M, Z275 zinc coating designation; 0.6 mm core steel. Shop pre-coated with as selected coating; colour PVDF.

2.2 Accessories

1. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
2. Sealant: Polyurethane type, specified in Section 07 92 00.

2.3 Fabrication

1. Form sections true to shape, accurate in size, square, and free from distortion or defects.
2. Fabricate cleats of same material as sheet, minimum 25mm wide, interlockable with sheet.
3. Form pieces in longest possible lengths.
4. Hem exposed edges on underside 13 mm; mitre and seam corners.
5. Form material with flat lock seams.
6. Fabricate corners from one piece with minimum 450 mm long legs; seam for rigidity, seal with sealant.
7. Fabricate vertical faces with bottom edge formed outward 6 mm and hemmed to form drip.
8. Fabricate flashings to allow toe to extend 50 mm over roofing membrane. Return and brake edges.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets in place, and nailing strips located.
3. Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 Preparation

1. Install starter and edge strips, and cleats before starting installation.
2. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

3.3 Installation

1. Insert flashings into reglets to form tight fit. Secure in place with plastic wedges. Seal flashings into reglets with sealant.
2. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
3. Apply plastic cement compound between metal flashings and felt flashings.
4. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
5. Seal metal joints watertight.

3.4 Field quality control

1. Section 01 45 00: Field inspection.
2. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

Ω End of Section

SECTION 07 84 00

Firestopping

Part 1 General

1.1 Section includes

1. Tested and listed firestopping systems.
2. Labour, material, equipment, supervision and incidental services as necessary to complete all fire stopping and smoke seal work required to complete construction as indicated on the drawings and specified herein, including but not limited to:
 - 2.1. Filling of voids and cavities at top of fire-rated wall assemblies to maintain rating as indicated on drawings.
 - 2.2. Filling of vertical voids within wall assemblies where demising walls penetrate exterior wall assemblies.

1.2 Related requirements

1. Section 09 21 16 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination: Coordinate with other work having a direct bearing on work of this section.
3. Sequencing: Coordinate and sequence firestopping installation with all affected trades.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide manufacturer's written data on product characteristics, and performance.
3. System Design Listings: Submit system design listings including illustrations from a qualified nationally recognized testing and inspection agency applicable to each firestop configuration.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's written special preparation and installation requirements and tested and listed firestop systems designs.
3. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience and FCIA Manufacturer Member in good standing.

2. Single Source Responsibility: Obtain firestop systems for each type of penetration and construction situation from a single primary firestop systems manufacturer. Obtain firestop systems for complete project, from a single primary firestop systems manufacturer, to the greatest extent possible.

1.8 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Deliver firestopping products in original, unopened containers with labels intact and legible, identifying product and manufacturer.
3. Store and handle firestopping materials to manufacturer's instructions.

1.9 Site conditions

1. Ambient Conditions:
 - 1.1. Do not apply materials when temperature of substrate material and ambient air is below 15 degrees C.
 - 1.2. Maintain this minimum temperature before, during, and for three (3) days after installation of materials.
 - 1.3. Provide ventilation to manufacturer's instructions in areas to receive solvent cured materials.

Part 2 Products

2.1 Manufacturers

1. Acceptable Manufacturers:
 - 1.1. 3M Fire Protection Products.
 - 1.2. BALCO, Inc.
 - 1.3. HILTI, Inc.
 - 1.4. Specified Technologies, Inc
 - 1.5. Thermal Ceramics, Inc.
 - 1.6. Thermafiber, Inc.
2. Substitutions: Refer to Section 01 25 00.

2.2 Description

1. System Description:
2. Tested and listed firestopping systems consisting of a material or materials, the wall or floor assembly, and penetrating items or gaps, assembled or placed in spaces, gaps, joints and building perimeters, to restore the fire resistance rating and or smoke resistant properties of a fire resistance rated assembly or smoke resistant assembly.
3. Regulatory Requirements:
 - 3.1. Conform to applicable code for fire resistance ratings and surface burning characteristics.

2.3 Performance / design criteria

1. Materials, accessories and application procedures listed by ULC, or tested to CAN/ULC-S115 to comply with applicable building code requirements.
2. Firestopping Materials: CAN/ULC-S101, to achieve a fire rating as noted on Drawings.
3. Surface Burning Characteristics: CAN/ULC-S102 or CAN/ULC-S102.2, as applicable.

4. Smoke Resistance: For areas where smoke resistance is required, provide firestop systems with L-ratings of maximum 25.4l/sec/sq m opening area.
5. Environmental Resistance: Systems to be resistant to environmental conditions they will be exposed to, as apparent at design stage.

2.4 Materials

1. Fire Stopping Systems and Materials: Tested and listed by ULC, and conforming to construction type, penetrant type, annular space requirements and fire rating involved in each separate instance.

2.5 Accessories

1. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces.
2. Forming/Packing Material: Permanent type, suitable for application.
3. Installation Accessories: Clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping are ready to receive the work of this section.
3. Verify tested and listed systems selected are applicable to the conditions encountered.
4. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 Preparation

1. Clean substrate surfaces as recommended in manufacturer's written instructions, of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material and performance of firestop system for fire or smoke resistant situations.
2. Remove incompatible materials which may affect bond.
3. Install backing materials to arrest liquid material leakage.

3.3 Application

1. Apply primer and firestopping materials to manufacturer's written instructions.
2. Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping to tested and listed system or engineering judgment.
3. Apply firestopping material, thickness sufficient to achieve rating, to uniform density and texture.
4. Compress fibred material to achieve a density of 40% of its uncompressed density.
5. Place intumescent coating in sufficient coats to achieve rating required.
6. Dam Material: Dam material to remain.

3.4 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Clean adjacent surfaces of firestopping materials.

3.5 Protection

1. Section 01 78 23: Protecting installed work.
2. Protect adjacent surfaces from damage by material installation.

Ω End of Section

SECTION 07 92 00

Joint sealants

Part 1 General

1.1 Section includes

1. Provide labour, material, equipment, supervision, and incidental services as necessary to complete all sealant work required to complete construction as indicated on drawings and specified herein, including but not limited to:
2. Preparing substrate surfaces.
3. Sealant and joint backing.
4. Caulking and sealants not specified in other sections.

1.2 Related requirements

1. Section 07 84 00 - Firestopping: Sealants required in conjunction with firestopping.
2. Section 07 62 00 - Sheet Metal Flashing And Trim: Sealants required in conjunction with metal flashings.
3. Section 08 11 13 - Metal Doors and Frames: Sealants required in conjunction with door frames.
4. Section 08 80 00 – Glass and Glazing: Sealants required in conjunction with glazing methods.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the work with all sections referencing this section.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations and colour availability.
3. Structural Sealant Joint Design: Provide calculations for structural bite, dead load support, glueline thickness, shear, and other parameters.
4. Samples: Submit two (2) samples, (colour charts) in size illustrating sealant colours for selection.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
2. Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.8 Site conditions

1. Ambient Conditions:
 - 1.1. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.9 Warranty

1. Section 01 78 00: Warranties.
2. Warranty: Provide a five (5) year warranty for failure to meet specified requirements including coverage for installed sealants and accessories which fail to achieve air tight seal, exhibit loss of adhesion or cohesion, or do not cure.
3. Manufacturer's Warranty: Provide manufacturer's twenty (20) year material warranty for installed silicone sealant.

Part 2 Products

2.1 Sealants

1. Between window frames and masonry: sealant to CAN/CGSB 19.13, MC 2 25 N, colour as selected by Consultant.
2. Exterior caulking: to CAN/CGSB 19.13, single component, Class MCG-2-25-B-N. Dymonic as manufactured by Tremco, or Sika Flex 1A as manufactured by Sika Canada Inc. Colours as selected by Consultant.
3. Vertical cementitious substrate application: CAN2-19.24, epoxidized polyurethane, terpolymer type, Tremco Dymonic or, SikaFlex 2CNSEZ by Sika Canada Inc., or Consultant approved equal.
4. Caulking at glass and metal: to CAN/CGSB 19.13-M87, Type MCG Class 2-25, Silicone. Dow Corning 795 Silicone Building Sealant or Consultant approved equal.
5. Interior caulking: to CGSB 19-GP-17M, acrylic latex.
6. Control joints in concrete floors: to CGSB 19-GP-24M, multi-component, polyurethane self-levelling joint sealant to ASTM C-920 Type M, Grade NS, Class 25. Use applicable product for flat and/or sloped areas. Tremco THC 900, Sikaflex 2C SL or Consultant approved equal.
7. Wet locations (ceramic tile edges, perimeter of washroom fixtures and vanities): CGSB 19-GP-18M, one-part silicone rubber. Dow Corning 786 Mildew resistant Silicone Sealer or Consultant approved equal.
8. Use sealants in colours to match the colour of adjoining materials as selected by the Consultant.

2.2 Accessories

1. Primer: Non-staining type, as recommended by sealant manufacturer to suit application.
2. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

3. Joint Backing: ASTM C1330, round, closed cell; polyethylene foam rod, oversized 30% to 50% larger than joint width.
4. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
5. Masking tape: Non-staining, non-absorbent type compatible with sealant and adjacent surfaces.
6. Setting Blocks and Spacers: Compatible with silicone sealant and recommended by sealant manufacturer.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that substrate surfaces are clean, dry, and free of frost and ready to receive work.
3. Verify that joint backing and release tapes are compatible with sealant and adjacent materials.

3.2 Preparation

1. Remove loose materials and foreign matter which might impair adhesion of sealant.
2. Clean and prime joints to sealant manufacturer's written instructions.
3. Perform preparation to sealant manufacturer's written instructions.
4. Protect elements surrounding the work of this section from damage or disfiguration.

3.3 Installation

1. Install sealant to sealant manufacturer's written instructions.
2. Measure joint dimensions and size materials to achieve required width/depth ratios.
3. Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.
4. Install bond breaker where joint backing is not used.
5. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
6. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
7. Tool joints concave.

3.4 Field quality control

1. Section 01 45 00: Field inspection.

3.5 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Clean adjacent soiled surfaces.

3.6 Protection

1. Section 01 78 23: Protecting installed work.
2. Remove masking tape and excess sealant.
3. Protect sealants until cured, remove temporary glass supports.

Ω End of Section

SECTION 08 12 13.13

Standard hollow metal frames

Part 1 General

1.1 Section includes

1. Steel frames, interior, exterior, thermally broken, fire rated, and non-fire rated.
2. Glazed light frames, interior and exterior.
3. Glass and Glazing.

1.2 Related requirements

1. Section 08 13 13.13 - Standard Hollow Metal Doors.
2. Section 08 71 00 - Door Hardware - General: Hardware, and weatherstripping.
3. Section 08 80 00 - Glazing.
4. Section 09 91 00 - Painting: Field painting of frames.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the work with frame opening construction, door, and hardware installation.
3. Sequencing: Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Indicate frame configurations and finishes, location of cut-outs for hardware reinforcement.
3. Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.8 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Remove frames from wrappings or coverings upon receipt on site and inspect for damage.
3. Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 Manufacturers

1. Acceptable manufacturers: S.W. Fleming Ltd., Macotta Company of Canada Ltd., Stanley-Bumeda Ltd., Nystrom Inc., Metal Door Ltd., or Consultant approval equal.
2. Other acceptable manufacturers offering functionally and aesthetically equivalent products.
3. Substitutions: Refer to Section 01 25 00.

2.2 Description

1. Regulatory Requirements:
 - 1.1. Fire Rated Frames, Transom and Sidelight Assemblies: Listed to CAN/ULC-S104.

2.3 Materials

1. Sheet Steel: Galvanized steel to ASTM A653/A653M, commercial grade (CS), Type B, coating designation ZF120 for exterior frames, coating designation A60 for interior frames.
2. Reinforcement Channel: To CSA-G40.20/G40.21, Type 44W, ASTM A653/A653M coating designation to ZF75.

2.4 Primers

1. Primer: Rust inhibitive touch-up only.

2.5 Accessories

1. Door Silencers: Single stud rubber/neoprene.
2. Frame Thermal Breaks: Rigid polyvinylchloride (PVC) extrusion.
3. Removable Glazing Stops: Formed galvanized steel channel, minimum 16 mm high.
4. Bituminous Coating: Fibred asphalt emulsion.
5. Weatherstripping: Specified in Section 08 71 00.
6. Glass: As specified in Section 08 80 00.

2.6 Fabrication

1. Exterior Frames: 16 ga thick base metal thickness.
 - 1.1. Door Frames: Welded type construction, thermally broken.
2. Interior Frames: 16 ga thick base metal thickness.
 - 2.1. Door Frames: Welded type construction.
 - 2.2. Window Assemblies: Welded type construction.
 - 2.3. Transom Frames: Welded type construction.
 - 2.4. Sidelight Assemblies: Welded type construction.

3. Mullions (for double doors): Removable type, of same profiles as jambs.
4. Transom Bars for Glazed Lights: Fixed type, of same profiles as jamb and head.
5. Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier. Provide mortar guard boxes.
6. Reinforce frames wider than 1 200 mm with roll formed steel channels fitted tightly into frame head, flush with top.
7. Prepare frames for silencers. Provide three (3) single silencers for single doors and mullions of double doors on strike side. Provide two (2) single silencers on frame head at double doors without mullions.
8. Configure exterior frames with special profile to receive recessed weatherstripping.
9. Attach fire rated label to each fire rated frame.
10. Fabricate frames to suit masonry wall coursing with 100 mm head member.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that opening sizes and tolerances are acceptable; check floor area within path of door swing for flatness.
3. Verify frames are correct size, swing, rating and opening number.
4. Remove temporary shipping spreaders.

3.2 Installation

1. Install frames to CSDMA.
2. Install fire-rated frames to NFPA 80, and local authority having jurisdiction.
3. Coordinate with masonry and gypsum board wall construction for anchor placement.
4. Coordinate installation of glass and glazing.
5. Coordinate installation of frames with installation of hardware specified in Section 08 71 00 and doors specified in Section 08 13 13.13.
6. Set frames plumb, square, level and at correct elevation.
7. Secure anchorages and connections to adjacent construction.
8. Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1 200 mm in width.
9. Remove wood spreaders after frames have been built-in.
10. Make allowance for deflection to ensure structural loads are not transmitted to frame product.
11. Install glazing with glazing stops, butted at corners and fastened to frame sections with counter-sunk tamper proof sheet metal screws.
12. Install door silencers.
13. Finish paint as specified in Section 09 91 00.
14. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 Erection tolerances

1. Section 01 73 00: Tolerances.
2. Maximum Diagonal Distortion: 3 mm measured with straight edges, crossed corner to corner.

Ω End of Section

SECTION 08 13 13.13

Standard hollow metal doors

Part 1 General

1.1 Section includes

1. Steel doors and panels, non-rated, fire rated, and thermally insulated.
2. Louvres.
3. Glass and glazing.

1.2 Related requirements

1. Section 08 12 13.13 - Standard Hollow Metal Frames.
2. Section 08 71 00 - Door Hardware - General: Hardware.
3. Section 08 80 00 - Glazing: Glass for doors.
4. Section 09 91 00 - Painting: Field painting of doors.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination: Coordinate with other work having a direct bearing on work of this section.
 - 2.1. Coordinate the work with door opening construction, door frame, and door hardware installation.
3. Sequencing: Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Indicate door configurations and finishes, location of cut-outs for hardware reinforcement.
3. Shop Drawings: Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing and louvres.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.8 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Remove doors from wrappings or coverings upon receipt on site and inspect for damage.
3. Store in vertical position, spaced with blocking to permit air circulation between components.
4. Store materials on planks or dunnage, out of water and covered to protect from damage.
5. Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 Manufacturers

1. Acceptable manufacturers: S.W. Fleming Ltd., Macotta Company of Canada Ltd., Stanley-Bumeda Ltd., Nystrom Inc., Metal Door Ltd., or Consultant approval equal.
2. Other acceptable manufacturers offering functionally and aesthetically equivalent products.
3. Substitutions: Refer to Section 01 25 00.

2.2 Description

1. Regulatory Requirements:
 - 1.1. Fire Rated Door and Frame Construction: Labelled and listed to CAN/ULC-S104.
 - 1.2. Installed Door and Panel Assembly: Conform to NFPA 80 for fire rated class as indicated.

2.3 Materials

1. Sheet Steel: Galvanized steel to ASTM A653/A653M, commercial grade (CS), Type B, coating designation ZF120 for exterior doors, coating designation ZF75 for interior doors.

2.4 Door [and panel] core materials

1. Honeycomb Core: Structural small cell 25.4 mm maximum kraft paper honeycomb; weight 36.3 kg per ream minimum, density 16.5 kg/cu m minimum, sanded to required thickness.
2. Polyisocyanurate Core: ASTM C591 (unfaced), rigid modified polyisocyanurate, closed cell board, 32 kg/cu m, thermal value RSI-1.9 minimum.
3. Temperature Rise Rated (TRR) Core: Composition to provide fire-protection rating and limit temperature rise on unexposed side of door to 250 degrees C at 30 or 60 minutes, as determined by governing building code requirements, core tested as part of a complete door assembly, in accordance with CAN/ULC-S104, and listed by a nationally recognized testing agency having a factory inspection service.
4. Exterior insulated doors shall be "Trio-E" as manufactured by Fleming Door Products or Consultant-approved equal.

2.5 Adhesives

1. Cores and Steel Components: Heat resistant, structural reinforced epoxy, resin based adhesive.
2. Lock Seam: Reinforced epoxy resin, high viscosity, thixotropic sealant.

2.6 Primers

1. Primer: Rust inhibitive touch-up only.

2.7 Accessories

1. Door Silencers: Single stud rubber/neoprene.
2. Exterior Top Caps: Rigid polyvinylchloride (PVC) extrusion.
3. Removable Glazing Stops: Formed galvanized steel channel, minimum high, accurately fitted, butted at corners and fastened with counter-sunk tamper proof sheet metal screws.
4. Louvres: Specified in Section 08 91 19.
5. Glass: As specified in Section 08 80 00.

2.8 Fabrication

1. Exterior Doors: Laminated core construction.
2. Interior Doors: Laminated core construction.
3. Longitudinal Edges: Continuously welded, filled and sanded with no visible edge seams.
4. Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.
5. Reinforce for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware.
6. Top and Bottom Channels: Inverted, recessed, welded steel channels.
7. Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

2.9 Laminated core construction

1. Exterior Doors: Both face sheets 1.6 mm steel, with polyisocyanurate core, laminated under pressure to face sheets.
2. Interior Doors: Both face sheets 1.6 mm steel with honeycomb core and temperature rise rated core where scheduled, laminated under pressure to face sheets.
3. Laminate vertical steel stiffeners to each face sheet at 150 mm on center maximum.
4. Fill voids between vertical stiffeners with fibreglass batt insulation.

2.10 Welded stiffener construction

1. Exterior Doors: Both face sheets 1.6 mm steel.
2. Interior Doors: Both face sheets 1.6 mm steel.
3. Reinforce doors with vertical stiffeners, welded to each face sheet at 150 mm on center maximum.
4. Fill voids between vertical stiffeners with fibreglass batt insulation.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that opening sizes and tolerances are acceptable; check floor area within path of door swing for flatness.
3. Verify doors are correct size, swing, rating and opening number.

3.2 Installation

1. Install doors to CSDMA.
2. Install fire-rated doors in accordance with NFPA 80, and local authority having jurisdiction.
3. Coordinate installation of glass and glazing.
4. Coordinate installation of doors with installation of frames specified in Section 08 12 13.13 and hardware specified in Section 08 71 00.
5. Install doors and hardware in accordance with hardware templates and manufacturer's written instructions.
6. Adjust operable parts for correct clearances and function.
7. Install louvers, glazing and door silencers.
8. Finish paint in accordance with Section 09 91 00.

3.3 Erection tolerances

1. Section 01 73 00: Tolerances.
2. Maximum Diagonal Distortion: 3 mm measured with straight edges, crossed corner to corner.

Ω End of Section

SECTION 08 71 00

Door hardware

Part 1 General

1.1 Section includes

1. Supply of door hardware for doors as specified within attached hardware schedule.

1.2 Related requirements

1. Section 08 12 13.13 - Standard Hollow Metal Frames.
2. Section 08 13 13.13 - Standard Hollow Metal Doors.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination: Coordinate with other work having a direct bearing on work of this section.
 - 2.1. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - 2.2. Coordinate Owner's keying requirements during the course of the Work.
3. Sequencing: Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Shop Drawings:
 - 2.1. Indicate locations and mounting heights of each type of hardware, schedules, catalogue cuts, electrical characteristics and connection requirements.
 - 2.2. Submit manufacturer's parts lists and templates.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.
2. Operation and Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
3. Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
4. Record Documentation:
 - 4.1. Record actual locations of installed cylinders and their master key code.
 - 4.2. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.7 Maintenance material submittals

1. Section 01 78 23: Maintenance and extra material requirements.
2. Extra Stock Materials:
 - 2.1. Provide ten (10) extra key lock cylinders for each master keyed group.
3. Tools:
 - 3.1. Provide special wrenches and tools applicable to each different or special hardware component.
 - 3.2. Provide maintenance tools and accessories supplied by hardware component manufacturer.

1.8 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
2. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.
3. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this section.

1.9 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.10 Warranty

1. Section 01 78 00: Warranties.
2. Provide five (5) year manufacturer warranty for door closers.

Part 2 Products

2.1 Suppliers

1. Use one manufacturer's products only for all similar items. Refer to attached hardware schedule for complete details on all door hardware.

2.2 Description

1. Regulatory Requirements:
 - 1.1. Conform to applicable code for Products requiring electrical connection. Listed and classified by CSA and ULC as suitable for the purpose specified and indicated.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that doors and frames are ready to receive work and dimensions are as indicated on Shop Drawings.
3. Verify that electric power is available to power operated devices and is of the correct characteristics.

3.2 Installation

1. Install hardware to manufacturer's written instructions.
2. Use templates provided by hardware item manufacturer.

3.3 Field quality control

1. Section 01 45 00: Field inspection, testing, and adjusting.
2. Architectural Hardware Consultant will inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's written instructions and as specified.

3.4 Adjusting

1. Adjust hardware for smooth operation.

3.5 Protection

1. Section 01 78 23: Protecting installed work.
2. Do not permit adjacent work to damage hardware or finish.

3.6 Schedules

1. Refer to Hardware Schedule attached.

Ω End of Section

SECTION 08 80 00

Glazing

Part 1 General

1.1 Section includes

1. Glass and glazing for sections referencing this section for Products and installation.

1.2 Related requirements

1. Section 08 13 13.13 - Standard Hollow Metal Doors: Glazed doors.
2. Section 08 12 13.13 - Standard Hollow Metal Frames: Glazed sidelights.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Pre-Installation Meeting: Convene one (1) week before starting work of this section.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data:
 - 2.1. Glass Sheets: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
 - 2.2. Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colours.
3. Samples:
 - 3.1. Submit two (2) samples 200mm in size, exemplifying glass units.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Certificates: Certify that Products meet or exceed specified requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Maintenance material submittals

1. Section 01 78 23: Maintenance and extra material requirements.

1.8 Quality assurance

1. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.9 Site conditions

1. Ambient Conditions:

- 1.1. Do not install glazing when ambient temperature is less than 10 degrees C.
- 1.2. Maintain minimum ambient temperature before, during and twenty-four (24) hours after installation of glazing compounds.

1.10 Warranty

1. Section 01 78 00: Warranties.
2. Provide a ten (10) year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.
3. Provide a ten (10) year warranty to include coverage for delamination of laminated glass and replacement of same.

Part 2 Products

2.1 Manufacturers

1. Safety Glass (Type **G2**): ANSI Z97.1, clear, tempered; minimum 6mm mm thick.
2. Fire lite Glass (Type **G3**): Thickness: 5mm (3/16"). Weight: 12.5 kg/m², approximate visible Transmission: 88 percent, approximate visible reflection: 9 percent, hardness (Vicker's Scale): 700, Fire-rating of 2 hours, Impact Safety Resistance: None, Positive Pressure Test: UL 10C; passes.

2.2 Sealed Insulating Glass Units

1. Insulated Glass Units - Low E (Type **IG/TG**): CAN/CGSB 12.8, double pane; soft sputtered coating on #2 surface within unit; interpane space filled with krypton gas; with metal edge seal; total unit thickness of 25 mm (1"inch).
 - 1.1. Visible Light Transmittance: 1.10
 - 1.2.2. Solar Heat Gain Coefficient: 0.3
 - 1.3. Max U-Value: U1.55

2.3 Performance / design criteria

1. Provide glass and glazing materials for continuity of building enclosure vapour retarder and air barrier:
2. To utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapour retarder seal.
3. To maintain a continuous air barrier and vapour retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.
4. Limit glass deflection to 1/200 with full recovery of glazing materials, whichever is less.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that openings for glazing are correctly sized and within tolerance.
3. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.2 Preparation

1. Clean contact surfaces with solvent and wipe dry.
2. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
3. Prime surfaces scheduled to receive sealant.
4. Install sealant in accordance with manufacturer's written instructions.

3.3 Installation - glazing

1. Exterior Dry Method (Tape and Gasket):
 - 1.1. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with compatible sealant.
 - 1.2. Place setting blocks at 1/4 points with edge block no more than 150 mm from corners.
 - 1.3. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
 - 1.4. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
 - 1.5. Trim protruding tape edge.
2. Exterior Wet/Dry Method (Tape and Sealant):
 - 2.1. Cut glazing tape to length and set against permanent stops, 6 mm below sight line. Seal corners by butting tape and dabbing with compatible sealant.
 - 2.2. Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapour seal.
 - 2.3. Place setting blocks at 1/4 points with edge block no more than 150 mm from corners.
 - 2.4. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
 - 2.5. Install removable stops, with spacer strips inserted between glazing and applied stops, 6 mm below sight line.
 - 2.6. Place glazing tape on glazing pane or unit with tape flush with sight line.
 - 2.7. Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, but not more than 10 mm below sight line.
 - 2.8. Apply cap bead of sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.
3. Exterior Wet Method (Sealant and Sealant):
 - 3.1. Place setting blocks at 1/4 points and install glazing pane or unit.
 - 3.2. Install removable stops with glazing centred in space by inserting spacer shims both sides at 600 mm intervals, 6 mm below sight line.
 - 3.3. Fill gaps between glazing and stops with compatible sealant to depth of bite on glazing, but not more than 10 mm below sight line to ensure full contact with glazing and continue the air and vapour seal.
 - 3.4. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.
4. Exterior Butt Glazed Method (Sealant only):
 - 4.1. Temporarily brace glass in position for duration of glazing process. Mask edges of glass at adjoining glass edges and between glass edges and framing members.
 - 4.2. Temporarily secure a small diameter non-adhering foamed rod on back side of joint.

- 4.3. Apply sealant to open side of joint in continuous operation; thoroughly fill the joint without displacing the foam rod. Tool the sealant surface smooth to concave profile.
- 4.4. Permit sealant to cure then remove foam backer rod. Apply sealant to opposite side, tool smooth to concave profile.
- 4.5. Remove masking tape.
5. Interior Dry Method (Tape and Tape):
 - 5.1. Cut glazing tape to length and set against permanent stops, projecting 1.5 mm above sight line.
 - 5.2. Place setting blocks at 1/4 points with edge block no more than 150 mm from corners.
 - 5.3. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
 - 5.4. Place glazing tape on free perimeter of glazing in same manner described above.
 - 5.5. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
 - 5.6. Knife trim protruding tape.
6. Interior Wet/Dry Method (Tape and Sealant):
 - 6.1. Cut glazing tape to length and install against permanent stops, projecting 1.5 mm above sight line.
 - 6.2. Place setting blocks at 1/4 points with edge block no more than 150 mm from corners.
 - 6.3. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
 - 6.4. Install removable stops, spacer shims inserted between glazing and applied stops at 600 mm intervals, 6 mm below sight line.
 - 6.5. Fill gaps between pane and applied stop with compatible sealant to depth equal to bite on glazing, to uniform and level line.
 - 6.6. Trim protruding tape edge.
7. Interior Wet Method (Compound and Compound):
 - 7.1. Install glazing resting on setting blocks. Install applied stop and centre pane by use of spacer shims at 600 mm centres, kept 6 mm below sight line.
 - 7.2. Locate and secure glazing pane using spring wire clips.
 - 7.3. Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.

3.4 Manufacturer's services

1. Glazing product manufacturers to provide field surveillance of the installation of their Products.
2. Monitor and report installation procedures and unacceptable conditions.

3.5 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Remove glazing materials from finish surfaces.
3. Remove labels after Work is complete.
4. Clean glass and adjacent surfaces.

3.6 Protection

1. Section 01 78 23: Protecting installed work.

2. After installation, mark pane with an 'X' by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units.

Ω End of Section

SECTION 09 21 16

Gypsum board assemblies

Part 1 General

1.1 Section includes

1. Gypsum board.
2. Acoustic insulation.
3. Light gauge metal stud wall framing.
4. Metal channel ceiling framing.

1.2 Related requirements

1. Section 06 10 00 - Rough Carpentry: Building wood framing system; wood blocking for support of wall mounted millwork, equipment, and hardware/accessories.
2. Section 07 21 16 - Blanket Insulation: Thermal and Acoustic insulation.
3. Section 07 84 00 - Firestopping.
4. Section 08 31 13 - Access Doors and Frames: Metal access panels and frames.

1.3 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.4 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.5 Quality assurance

1. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

Part 2 Products

2.1 Framing materials

1. Studs and Tracks: Specified in Section 09 22 16.
2. Fasteners: ASTM C1002.
3. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

2.2 Gypsum board materials

1. Gypsum Ceiling Board ASTM C1396/C1396M, paper-faced, regular core, 13 mm thick; 1220 mm wide, maximum available length in place; tapered edges, ends square cut.
2. Moisture Resistant Gypsum Board: ASTM C1396/C1396M, paper-faced, maximum available length in place; tapered edges, ends square cut.
 - 2.1. Regular core, 13 mm thick.

2.2. Fire rated core, 16 mm thick.

3. Abuse-Resistant Gypsum Board: ASTM C1396/C1396M, paper-faced, impact resistant; maximum available length in place; tapered edges, ends square cut.

3.1. Regular core, 13 mm thick.

3.2. Fire rated core, 16 mm thick.

2.3 Accessories

1. Acoustic Insulation: as per Section 07 21 16.
2. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
3. Corner Beads: GA-216, metal corner bead.
4. Edge Trim: GA-216; Type U casing bead.
5. Joint Materials: ASTM C475/C475M.
 - 5.1. Reinforcing tape, adhesive, and water.
 - 5.2. Joint compound: Asbestos-free dust-controlled.
6. Gypsum Board Fasteners: ASTM C1002, Type S.
7. Cementitious Board Fasteners: Board manufacturer's purpose made screws, corrosion resistant steel, self-drilling points, counter-sink heads to prevent strip-out, for steel substrate.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.

3.2 Metal stud installation

1. Install studs to ASTM C475/C475M.
2. Metal Stud Spacing: 400 mm on centre.
3. Extend stud framing to ceiling only. Attach ceiling runner securely to ceiling framing to
4. Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
5. Door Opening Framing: Install double studs at door frame jambs. Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.
6. Blocking: Nail or screw wood blocking to studs. Install blocking for support of toilet partitions, wall cabinets, toilet accessories, and hardware.

3.3 Wall furring installation

1. Erect furring for direct attachment to masonry and concrete walls.
2. Erect furring channels vertically; space maximum 400 mm on centre, not more than 100 mm from floor and ceiling lines. Secure in place on alternate channel flanges at maximum 600 mm on centre.

3.4 Ceiling framing installation

1. Install to ASTM C754.

2. Coordinate location of hangers with other work.
3. Install ceiling framing independent of walls, columns, and above ceiling work.
4. Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 600 mm past each end of openings.
5. Laterally brace entire suspension system.

3.5 Acoustic accessories installation

1. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
2. Install acoustic sealant within partitions in accordance with manufacturer's written instructions.
3. Install acoustic sealant at gypsum board perimeter at:
 - 3.1. Metal Framing: Two (2) beads.

3.6 Gypsum board installation

1. Install gypsum board to ASTM C840.
2. Erect single layer standard gypsum board vertical, with ends and edges occurring over firm bearing.
3. Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.
4. Use screws when fastening gypsum board to metal furring or framing.
5. Double Layer Applications: Secure second layer to first with fasteners. Apply adhesive to manufacturer's written instructions.
6. Place second layer perpendicular to first layer. Offset joints of second layer from joints of first layer.
7. Place control joints consistent with lines of building spaces as directed.
8. Place corner beads at external corners as indicated. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials as indicated.
9. Install backing board over metal studs to manufacturer's written instructions.

3.7 Joint treatment

1. Finish to ASTM C840, Level 5.
2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
3. Feather coats on to adjoining surfaces so that camber is maximum 0.8 mm.
4. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile.

3.8 Tolerances

1. Section 01 73 00: Tolerances.
2. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 3 mm in 3 m in any direction.

Ω End of Section

SECTION 09 22 16

Non-structural metal framing

Part 1 General

1.1 Section includes

1. Formed metal framing of studs and furring, at interior locations.
2. Framing accessories.

1.2 Related requirements

1. Section 06 10 00 - Rough Carpentry: Rough wood blocking within stud framing.
2. Section 07 26 00 - Vapour Retarders.
3. Section 07 21 16 - Blanket Insulation: Insulation between framing members.
4. Section 09 21 16 - Gypsum Board Assemblies: Gypsum board on metal studs for partitioning.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data:
 - 2.1. Provide data describing standard framing member materials and finish, product criteria, load charts, and limitations.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
2. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

Part 2 Products

2.1 Stud framing materials

1. Framing Assembly Components: ASTM C645.
2. Studs: ASTM A653/A653M, non-load bearing rolled steel, channel shaped, punched for utility access, as noted on the drawings:.
3. Tracks and Headers: Same material and thickness as studs, bent leg retainer notched to receive studs with provision for crimp locking to stud.
4. Ceiling Runners: With extended leg retainer.
5. Furring and Bracing Members: Of same material as studs; thickness to suit purpose.
6. Fasteners: ASTM C1002, self drilling, self tapping screws.
7. Acoustic Sealant: As specified in Section 09 21 16.
8. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic zinc-rich primer.

2.2 Fabrication

1. Fabricate assemblies of framed sections to sizes and profiles required.
2. Fit, reinforce, and brace framing members to suit design requirements.
3. Fit and assemble in largest practical sections for delivery to site, ready for installation.

2.3 Finishes

1. Studs Tracks and Headers: Galvanize to Z180 zinc coating designation.
2. Studs: Electro-galvanize.
3. Accessories: Same finish as framing members.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that rough-in utilities are in proper location.

3.2 Erection

1. Align and secure top and bottom runners at 600 mm on centre.
2. Place two (2) beads of acoustic sealant between runners and substrate studs and adjacent construction to achieve an acoustic seal.
3. Achieve an air tight seal between runners and substrate with acoustic sealant in conjunction with Section 07 27 00.
4. Place two (2) beads of acoustic sealant between studs and adjacent vertical surfaces to achieve an
5. Achieve an air tight seal between studs and adjacent vertical surfaces with acoustic sealant in conjunction with Section 07 27 00.
6. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
7. Install studs vertically at 400 mm on centre.
8. Align stud web openings horizontally.

9. Secure studs to tracks using fastener method. Do not weld.
10. Stud Splicing: Not permissible.
11. Fabricate corners using a minimum of three studs.
12. Double stud at wall openings, door and window jambs, not more than 50 mm from each side of openings.
13. Brace stud framing assembly rigid.
14. Coordinate erection of studs with requirements of door frames & window frames; install supports and attachments.
15. Coordinate installation of wood bucks, anchors, and wood blocking with electrical and mechanical work to be placed within or behind stud framing.
16. Blocking: Install blocking for support of toilet partitions, wall cabinets, toilet accessories, and hardware.
 - 16.1. Secure wood blocking to studs.
17. Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
18. Coordinate placement of insulation in stud spaces after stud frame erection.

3.3 Erection tolerances

1. Section 01 73 00: Tolerances.
2. Maximum Variation From True Position: 3 mm in 3 m.
3. Maximum Variation From Plumb: 3 mm in 3 m.

Ω End of Section

SECTION 09 30 00

Tiling

Part 1 General

1.1 Section includes

1. Porcelain tiling.
2. Tile accessories.
3. Mortar and Grout.
4. Floor levelling.

1.2 Related requirements

1. Section 04 20 00 - Masonry Units: Masonry wall substrate surface.
2. Section 07 92 00 - Joint Sealants: Mildew resistant sealant.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate requirements for floor recesses, accounting for mortar bed, bond coat and tile thickness where finished tile surfaces are installed flush with adjacent floor finishes.
3. Pre-installation Meetings: Convene one (1) week before starting work of this section.
 - 3.1. Attendance required by tile installer, Owner, and Consultant to discuss site conditions.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Submit manufacturer's product data for each type of product specified.
3. Samples for Initial Selection: Submit the following samples for initial selection:
 - 3.1. Tile: Submit samples of actual tiles or sections of tiles showing manufacturer's full range of colours, textures, and patterns available for each type and composition of tile indicated. Include samples of accessories involving colour selection.
 - 3.2. Grout: Manufacturer's standard colours using actual sections of grout showing full range of colours available for each type of grout indicated.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data:
 - 2.1. Manufacturer's recommended and special installation requirements.
 - 2.2. Written instructions for using adhesives and grouts.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.
2. Operation and Maintenance Data: Submit two (2) copies of TTMAC Maintenance Guide and additional information as follows.
 - 2.1. Manufacturer's maintenance data sheets for floor sealers and other non-tile maintenance materials and accessories.
 - 2.2. Warning of maintenance practices or materials that may damage or disfigure finished Work.

1.7 Maintenance material submittals

1. Section 01 78 23: Maintenance and extra material requirements.
2. Extra Stock Materials: Provide 2% of total of each size, colour, and surface finish of tile specified.
 - 2.1. Store in original containers, clearly marked to identify the following:
 - 2.1.1. Material series name and stocking number.
 - 2.1.2. Material description, including colour and pattern.

1.8 Quality assurance

1. Products of This Section: Manufactured to ISO 9000 certification requirements.
2. Conform to TTMAC Tile Installation Manual.
3. Quality Assurance Program: Provide specifications and material compatibility submissions to TTMAC as required for Verispec Program; include costs for Verispec Program as part of submitted Bid.
4. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
5. Installer Qualifications: Company specializing in performing the work of this section with minimum five (5) years documented experience and having completed tile installations similar in material, design and extent to this Project and be a member in good standing with TTMAC at time of bidding.

1.9 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Deliver and store packaged materials in original containers with seals unbroken and labels intact.
3. Store materials to prevent damage or contamination to materials by water, freezing, foreign matter, and other causes; store cementitious materials in a dry area, and raised off floor and ground surfaces.

1.10 Site conditions

1. Ambient Conditions:
 - 1.1. Apply tile after completion of Work by other sections, to dry, clean, firm, level and plumb surfaces, free from oil or wax or any other material detrimental to tile adhesion.
 - 1.2. Maintain tile materials and substrate temperature between manufacturer's recommended minimum and maximum temperature range.
 - 1.3. Maintain temperature range for minimum forty-eight (48) hours before and during installation and until materials are fully set and cured to manufacturer's recommendations.
 - 1.4. Maintain adequate ventilation where Work generates toxic gases or where there is a risk of raising relative humidity to levels detrimental to building finishes and assemblies.

Part 2 Products

2.1 Manufacturers

1. Porcelain Tile: Porcelain tile shall be Basaltina Series as distributed Centura or Regal series, matt finish as distributed by Olympia Tile. Size shall be 300mm x 600mm (12" x 24") nominal. All bases shall be 100mm x 300mm (4" x 12") of the same product. Colours to be selected from standard colour range.
 - 1.1. Equal products from other manufacturers will be considered as substitutions upon review and acceptance by the Consultant.
2. Mortar and Grout:
 - 2.1. Manufacturer of premix grouts, mortars and additives: Laticrete International Inc., Mapei Corp., or TEC.
 - 2.2. Interior Setting System Floors and Walls: Premium Dry Set Mortar to ANSI A118.1 with Thin-set Mortar Additive to ANSI A118.4. Acceptable Products:
 - .1 Laticrete 272/3701 as manufactured by Laticrete International Inc.
 - .2 Mapei, Kerabond/Kerlastic, manufactured by Mapei.
 - .3 TEC, Full Flex, Premium Latex Modified Thin Set Mortar.

2.2 Description

1. System Description:
 - 1.1. Porcelain tile, installed on floors, including base and using thinset application method.

2.3 Performance / design criteria

1. Floor Traffic Load Bearing Performance: ASTM C627, with the following load rating:
 - 1.1. Heavy, passing cycles 1 through 12.
2. Surface Flatness Tolerances:
 - 2.1. Standard Format Floor Tile (100 x 100 mm to 400 x 400 mm): Floor flatness measured to a minimum FF35; equivalent to 5 mm with maximum 2 gaps under a 3 m straightedge measurement.

2.4 Trims and edging

1. Trims: Shapes and profiles to match colour and finish of adjoining field tile; coordinate with size and coursing of adjoining flat tile where applicable.
 - 1.1. Base: Non-coved, to match flooring for surface finish and colour:
 - 1.1.1. Length of units: 300 mm.
 - 1.1.2. Height: 100 mm.
 - 1.1.3. Top Edge: Bull nosed.
2. Straight Edge and Transition Strips: Roll formed stainless steel edge strips, 'L' shape; height as required to suit tile installation; with integral perforated anchoring leg.
 - 2.1. Schluter – Jolly protective edge trim. Brushed stainless steel finish. Locate at top of tile base, transition points, and wall corners of porcelain tile.
3. Reducer Strips: Purpose made metal extrusion; stainless steel type; maximum slope of 1:2.
 - 3.1. Stainless Steel Transition piece: Schluter – Deco (E 80 D) transition trim between different style or colours of tile. Stainless steel finish. Locate at transition points in tile flooring where indicated on the drawings.

2.5 Mortar and grout materials

1. Mortar Bed Materials:
 - 1.1. Interior Setting System Floors and Walls: Premium Dry Set Mortar to ANSI A118.1 with Thin-set Mortar Additive to ANSI A118.4. Acceptable Products:
 - .1 Laticrete 272/3701 as manufactured by Laticrete International Inc.
 - .2 Mapei, Kerabond/Kerlastic, manufactured by Mapei.
 - .3 TEC, Full Flex, Premium Latex Modified Thin Set Mortar.
2. Bond coat for all tile in moisture/water areas (washroom floors and walls, Shower stalls and drying areas, mop sink walls, or where indicated elsewhere on the drawings): Tec Full flex latex modified thin set mortar and Tec hydraflex waterproofing substrate or Consultant approved equal.
3. Dry Curing Grout for Interior Work: to ANSI A118.6, High density, factory prepared cementitious type grouting compound and latex grout additive. Acceptable Products:
 - .1 Laticrete 500/1776 as manufactured by Laticrete International Inc.
 - .2 Mapei, Ker 700 Series Ultra/Colour1 Plastijoint as manufactured by Mapei
 - .3 TEC, AccuColour XT- Premium Sanded Grout with TEC Acrylic Grout Additive.
4. Self-Levelling Underlayment: Latex-modified, portland cement-based, as recommended by tile-setting manufacturer.

2.6 Cementitious mixes

1. Premanufactured Mortars and Grouts: Mix to manufacturers' written instructions.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Examine surfaces and verify that surfaces are ready to receive tile installation.
 - 2.1. Concrete substrates have cured minimum of ninety (90) days to TTMAC requirements.
 - 2.2. Substrates are dry; clean; free from oil, waxy films, and curing compounds; and within starting flatness tolerances as specified in Section 03 35 00, and are ready for application of levelling materials.
 - 2.3. Grounds, anchors, recessed frames, electrical and mechanical units of Work in or behind tile have been installed.
 - 2.4. Joints and cracks in tile substrates are coordinated with tile joint locations.
3. Verify tile subject to colour variations has been factory blended and packaged. If not factory blended, blend tiles at site before installing.

3.2 Preparation

1. Protect surrounding work from damage or disfiguration.
2. Vacuum clean surfaces and damp clean.
3. Seal substrate surface cracks with filler. Level existing substrate surfaces to flatness tolerances specified.

3.3 Installation

1. Install tile to TTMAC Tile Installation Manual.
2. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

3. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions:
4. Cut and fit tile tight to penetrations through tile. Form corners neatly. Align floor joints.
5. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar or grout.
6. Adjust tile layout to minimize tile cutting. Maintain minimum tile width of one-third unit size unless indicated otherwise on Drawings.
7. Form internal angles square and external angles square.
8. Sound tile after setting. Replace hollow sounding units.
9. Allow tile to set for a minimum of forty-eight (48) hours prior to grouting.
10. Install grout to TTMAC Tile Installation Manual and manufacturer's written instructions.
11. Apply sealant to junction of tile and dissimilar materials and planes.
12. Install prefabricated edge strips and movement joints at locations indicated or where exposed edge of floor tile meets different flooring materials and exposed substrates.
13. Protect exposed edges of floor tile with properly sized transition strips; at uneven transitions between 6 mm and 13 mm, use sloped reducer strips.

3.4 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Clean tile and grout surfaces with manufacturer's recommended cleaning methods.

3.5 Protection

1. Section 01 78 23: Protecting installed work.
2. Protect finished areas from traffic until setting materials have sufficiently cured to TTMAC requirements.
3. Protect finished floor areas from foot and wheel traffic from floors for a minimum of twenty-four (24) hours after completion of grouting.

Ω End of Section

SECTION 09 51 13

Acoustical panel ceilings

Part 1 General

1.1 Section includes

1. Suspended metal grid ceiling system and perimeter trim.
2. Acoustic tile.

1.2 Related requirements

1. Section 08 31 13 - Access Doors and Frames: Access panels.
2. Section 09 21 16 - Gypsum Board Assemblies: Acoustic partition system.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Sequencing:
 - 2.1. Sequence work to ensure acoustic ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
 - 2.2. Install acoustic units after interior wet work is dry.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on metal grid system components and acoustic units.
3. Shop Drawings:
 - 3.1. Indicate grid layout and related dimensioning, junctions with other work or ceiling finishes, interrelation of mechanical and electrical items related to system.
4. Samples:
 - 4.1. Submit two (2) samples, 152mm x 152mm in size, illustrating material and finish of acoustic units.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements, including perimeter conditions requiring special attention.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

1.7 Maintenance material submittals

1. Section 01 78 23: Maintenance and extra material requirements.
2. Extra Stock Materials: Provide 2% of total acoustic unit area of extra tile to Owner.

1.8 Quality assurance

1. Conform to AWCCBC requirements.
2. Grid Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
3. Acoustic Unit Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.9 Site conditions

1. Ambient Conditions:
 - 1.1. Maintain uniform temperature of minimum 16 degrees C, and maximum humidity of 40% prior to, during, and after acoustic unit installation.

Part 2 Products

2.1 Materials

1. Acoustic Tile – Type 1 (as noted on ceiling plans): Acoustic units for suspended ceiling to CAN/CGSB-92.1.
 - .1 Type: Armstrong World Industries Canada Limited.
 - .2 Pattern: School Zone No. 1824 Fine Fissured angled tegular for 15/16" Grid.
 - .3 Flame spread rating of 25 or under (Class A) UL Labelled.
 - .4 Noise reduction coefficient (NRC) designation of 0.70.
 - .5 Light reflectance range of 0.85.
 - .6 Edge type: angled tegular.
 - .7 Colour: White.
 - .8 Size: 600 x 1200 x 19mm (24" x 48" x 3/4").
2. Non-fire Rated Grid: ASTM C635/C635M, intermediate duty; exposed T; components die cut and interlocking.
3. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
4. Exposed Grid Surface Width: 15/16 inch.
5. Grid Finish: Colour White.
6. Suspension Wires: Galvanized soft-annealed, mild steel, to suit application thickness.
7. Support Channels and Hangers: Galvanized steel; size and type to suit application, ceiling system flatness requirement specified.
8. Accessories: Stabilizer bars, clips, splices, perimeter moldings required for suspended grid system.

2.2 Accessories

1. Acoustic Sealant: For perimeter moldings, as specified in Section 07 92 00.
2. Gaskets (for perimeter moldings): Closed cell rubber sponge tape.
3. Touch-up Paint: Type and colour to match acoustic and grid units.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that layout of hangers will not interfere with other work.

3.2 Installation - lay-in grid suspension system

1. Install suspension system to manufacturer's written instructions, and as supplemented in this section.
2. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
3. Lay out system to a balanced grid design with edge units no less than 50% of acoustic unit size.
4. Locate system on room axis according to reflected plan.
5. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
6. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
7. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
8. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers to span the extra distance.
9. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 150 mm of each corner; or support components independently.
10. Do not eccentrically load system, or produce rotation of runners.
11. Perimeter Molding:
 - 11.1. Install edge molding at intersection of ceiling and vertical surfaces /finishes.
 - 11.2. Use longest practical lengths.
 - 11.3. Overlap corners.
 - 11.4. Provide molding at junctions with other interruptions.

3.3 Installation - acoustic units

1. Install acoustic units to manufacturer's written instructions.
2. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
3. Install units after above ceiling work is complete.
4. Install acoustic units level, in uniform plane, and free from twist, warp, and dents.
5. Cutting Acoustic Units:
 - 5.1. Cut to fit irregular grid and perimeter edge trim.
 - 5.2. Cut bevel edges to field cut units.
 - 5.3. Double cut and field paint exposed edges of tegular units.
6. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.4 Erection tolerances

1. Section 01 73 00: Tolerances.
2. Maximum Variation from Flat and Level Surface: 3 mm in 3 m.

Ω End of Section

SECTION 09 65 00

Resilient flooring

Part 1 General

1.1 Section includes

1. Resilient tile flooring.
2. Resilient base.

1.2 Related requirements

1. Section 03 30 00 - Cast-in-Place Concrete: Floor substrate surface.
2. Section 09 21 16 - Gypsum Board Assemblies: Wall materials to receive application of base.

1.3 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, and patterns and colours available.
3. Samples:
 - 3.1. Submit two (2) samples, 150 mm x 150 mm in size illustrating colour and pattern for each floor material for each colour specified.
 - 3.2. Submit two (2) long samples of base material for each colour specified.

1.4 Closeout submittals

1. Section 01 78 00: Submission procedures.
2. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.5 Maintenance material submittals

1. Section 01 78 23: Maintenance and extra material requirements.
2. Extra Stock Materials: Provide 2% of flooring, 4 lin m of base of each material specified.

1.6 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
2. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.7 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Protect roll materials from damage by storing on end.

1.8 Site conditions

1. Ambient Conditions:
 - 1.1. Store materials for three (3) days prior to installation in area of installation to achieve temperature stability.
 - 1.2. Maintain ambient temperature required by adhesive manufacturer three (3) days prior to, during, and twenty-four (24) hours after installation of materials.

Part 2 Products

2.1 Materials - tile flooring

1. VCT-1: Vinyl composition tile shall be 12" x 12" x 1/8" thick conforming to ASTM F1066, Class 2, through pattern in standard colours to be selected by the Consultant. Vinyl composition tile shall be one of the following:
 - .1 Armstrong, Standard Excelon or Imperial Texture
 - .2 Amtico, Contract Series, Fortress Elements 1 Color Thru
 - .3 Azrock by Tarkett, Standard Cortina & Compliments
 - .4 Flextile, Canada Flex-Thru
 - .5 Mannington, Essentials & Designer EssentialsThe choice of manufacturer and colours selected shall remain with the Consultant. More than two colour tiles will be selected in one space. Tiles will be set in place to pattern(s) and colours as set by Consultant.

2.2 Materials - base

1. Base: ASTM F1861, Type TV thermoplastic vinyl; top set coved; premoulded external corners:
 - 1.1. Height: 100 mm.
 - 1.2. Thickness: 3 mm thick.
2. Base Accessories: Premoulded end stops and external corners, of same material, size, and colour as base.

2.3 Accessories

1. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
2. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
3. Edge Strips: Flooring material.
4. Sealer and Wax: Types recommended by flooring manufacturer.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify concrete floors are dry to a maximum moisture content of 7%, and exhibit negative alkalinity, carbonization, or dusting.
3. Verify floor and lower wall surfaces are free of substances that may impair adhesion of new adhesive and finish materials.

3.2 Preparation

1. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
2. Prohibit traffic until filler is cured.
3. Vacuum clean substrate.
4. Apply primer to horizontal surfaces.

3.3 Installation - tile flooring

1. Install tile flooring to manufacturer's written instructions.
2. Mix tile from container to ensure shade variations are consistent when tile is placed.
3. Spread only enough adhesive to permit installation of materials before initial set.
4. Set flooring in place, press with heavy roller to attain full adhesion.
5. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.
6. Install tile to ashlar pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
7. Terminate flooring at centreline of door openings where adjacent floor finish is dissimilar.
8. Install resilient edge strips at unprotected or exposed edges, and where flooring terminates. Secure metal strips before installation of flooring with stainless steel screws.
9. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
10. Install flooring in pan type floor access covers. Maintain floor pattern.
11. At movable partitions install flooring under partitions without interrupting floor pattern.

3.4 Installation - base

1. Fit joints tight and vertical. Maintain minimum measurement of 450 mm between joints.
2. Mitre internal corners. At external corners, use premoulded units. At exposed ends, use premoulded units.
3. Install base on solid backing. Bond tight to wall and floor surfaces.
4. Scribe and fit to door frames and other interruptions.

3.5 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Remove access adhesive from floor, base, and wall surfaces without damage.
3. Clean, seal, and wax floor and base surfaces in accordance with manufacturer's written instructions.

3.6 Protection

1. Section 01 78 23: Protecting installed work.
2. Prohibit traffic on floor finish for forty-eight (48) hours after installation.

Ω End of Section

SECTION 09 91 00

Painting

Part 1 General

1.1 Section includes

1. Surface preparation.
2. Painting.

1.2 Related requirements

1. Section 05 50 00 - Metal Fabrications: Shop primed items.
2. Section 06 41 00 - Architectural Wood Casework: Shop finished cabinet work.
3. Section 32 17 23.13 – Painted Pavement Markings.

1.3 Reference standards

1. MPI (Master Painters Institute) – Architectural Painting Specifications Manual and Maintenance Repainting Manual.

1.4 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination: Coordinate with other Work having a direct bearing on Work of this section.
3. Scheduling:
 - 3.1. Schedule painting operations to prevent disruption of and by other trades.

1.5 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data:
 - 2.1. Submit Product data on all specified finishing products.
3. Samples:
 - 3.1. Submit two (2) samples, 200mm in size illustrating range of colours and textures available for each surface finishing product scheduled.

1.6 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements including special surface preparation procedures and substrate conditions requiring special attention.

1.7 Closeout submittals

1. Section 01 78 00: Submission procedures.
2. Record Documentation: Upon completion, provide itemized list of products used including the following:
 - 2.1. Manufacturer's name.

2.2. Product name, type and use.

2.3. Colour coding number.

1.8 Maintenance material submittals

1. Section 01 78 23: Maintenance and extra material requirements.
2. Extra Stock Materials: Provide properly packaged maintenance material as follows.
 - 2.1. 1 gal of each coating type and colour to Owner.
 - 2.2. Label each container with colour, type, texture and room locations in addition to manufacturer's label.

1.9 Quality assurance

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience.
2. Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.10 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Deliver products to site in sealed and labeled containers showing manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, colour designation, and written instructions for mixing and reducing.
3. Store paint materials at minimum ambient temperature of 7 degrees C and a maximum of 32 degrees C, in dry, ventilated area and as required by manufacturer's written instructions.
4. Provide adequate fireproof storage lockers and warnings as required by authorities having jurisdiction for storing toxic and volatile/explosive/flammable materials.

1.11 Site conditions

1. Ambient Conditions:
 - 1.1. Do not perform painting or decorating Work when ambient air and substrate temperatures are below 10 degrees C for both interior and exterior work, or as required by paint product manufacturer.
 - 1.2. Do not perform painting or decorating Work when relative humidity is above 85% or when dew point is less than 3 degrees C variance between the air/surface temperature required by paint Product manufacturer.
 - 1.3. Provide suitable weatherproof covering and sufficient heating facilities to maintain minimum ambient air and substrate temperatures for twenty-four (24) hours before, during and after paint application.
 - 1.4. Do not perform painting and decorating Work when maximum moisture content of substrate exceeds:
 - 1.4.1. Wood: 15%.
 - 1.4.2. Plaster and Gypsum Wallboard: 12 %.
 - 1.4.3. Masonry, Concrete, and Concrete Unit Masonry: 12%.
 - 1.5. Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple cover patch test.
 - 1.6. Test concrete, masonry and plaster surfaces for alkalinity as required.

1.12 Waste management and disposal

1. Dispose of waste materials in accordance with Local authorities having jurisdiction.
2. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
3. Place non-reusable materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
4. To reduce contaminants entering waterways, sanitary/storm drain systems or into the ground, adhere to the following procedures:
 - 4.1. Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
 - 4.2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - 4.3. Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - 4.4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 - 4.5. Dry out empty paint cans prior to disposal or recycling.
 - 4.6. Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
5. Set aside and protect surplus and uncontaminated finish materials and deliver or arrange collection for verifiable re-use or re-manufacturing.

Part 2 Products

2.1 Materials

1. Use only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers) listed in the latest edition of the MPI Approved Product List (APL) on this project.
2. Ancillary materials such as linseed oil, shellac, thinners, solvents to be of highest quality product and provided by an MPI listed manufacturer, and compatible with paint materials being used.
3. Where possible, all materials to be lead and mercury free with low VOC content.
4. Provide all material for each system from a single manufacturer.
5. Fire Hazard: Flame spread and smoke developed ratings in accordance with applicable code.
6. Patching Materials: Latex filler.
7. Fastener Head Cover Materials: Latex filler.

2.2 Mixing and tinting

1. Coatings: Ready-mixed and pre-tinted; re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.
2. Paste, Powder or Catalyzed Paint: Mixed in accordance with manufacturer's written instructions.
3. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
 - 3.1. Do not exceed paint manufacturer's recommendations for addition of thinner. Do not use kerosene or any such organic solvents to thin water-based paints.
 - 3.2. Thin paint for spraying in accordance with paint manufacturer's instructions.

2.3 Finish and colour

1. Finish: To MPI Premium Grade finish requirements.
2. Colours and Finishes: Refer to Finish Schedule on interior design Drawings and schedules.

2.4 Exterior paint systems

1. Steel - High Heat: (heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted). EXT 5.2C: Inorganic zinc rich coating, maximum 400 degrees C.
2. Steel - Unprimed:
 - 2.1. One (1) coat of latex primer.
 - 2.2. Two (2) coats of latex enamel, semi-gloss finish.
3. Steel - Shop Primed:
 - 3.1. Touch-up with zinc rich primer.
 - 3.2. Two (2) coats of latex enamel, semi-gloss finish.

2.5 Interior paint systems

1. Concrete, Concrete Block, Masonry:
 - 1.1. One (1) coat of block filler.
 - 1.2. Two (2) coats of latex, semi-gloss finish.
2. Steel - Unprimed:
 - 2.1. One (1) coat of alkyd primer.
 - 2.2. Two (2) coats of latex enamel, semi-gloss finish.
3. Steel - Primed:
 - 3.1. Touch-up with alkyd primer.
 - 3.2. Two (2) coats of latex enamel, semi-gloss finish.
4. Steel - Galvanized:
 - 4.1. One (1) coat galvanize primer.
 - 4.2. Two (2) coats of latex enamel, semi-gloss finish.
5. Plaster, Gypsum Board:
 - 5.1. One (1) coat of latex primer sealer.
 - 5.2. Two (2) coats of latex acrylic enamel, eggshell finish.

2.6 Exterior paint systems

1. Structural Steel and Metal Fabrications:
 - 1.1. EXT 5.1A: Quick dry enamel, G7 finish.
2. Galvanized Metal: (not chromate passivated; for high contact/high traffic areas (doors, frames, railings, misc. steel, pipes, etc.) and low contact/low traffic areas (overhead decking, ducts, gutters, flashing, etc.).
 - 2.1. EXT 5.3A: Latex, G2 finish.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
3. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
4. Test shop applied primer for compatibility with subsequent cover materials.
 - 4.1. Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
 - 4.2. Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
 - 4.3. Apply paint when previous coat of paint is dry or adequately cured.

3.2 Preparation

1. Prepare surfaces in accordance with MPI requirements.
2. Remove and store or mask miscellaneous hardware and surface fittings such as electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to painting. Clean and replace upon completion of painting Work in each area. Remove doors before painting to paint bottom and top edges and re-hung.
3. Protect adjacent surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, from painting operations with drop cloths, shields, masking, templates, or other suitable protective means.
4. Correct defects and clean surfaces which affect work of this section. Start of finish painting of defective surfaces indicates acceptance of substrate and making good defects will be at no cost to Owner.
5. Confirm preparation and primer used with fabricator of steel items.
6. Seal with shellac and seal marks which may bleed through surface finishes.
7. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
8. Concrete Floors: Remove contamination; acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
9. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
10. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
11. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
12. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

13. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.
14. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.3 Application

1. Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.
2. Apply products to adequately prepared surfaces, within moisture limits and acceptable environmental conditions.
3. Apply paint finish in areas where dust is no longer being generated or when wind or ventilation conditions will not affect quality of finished surface.
4. Apply each coat to uniform finish.
5. Tint each coat of paint progressively lighter to enable confirmation of number of coats.
6. Unless otherwise approved, apply a minimum of four (4) coats of paint where deep or bright colours are used to achieve satisfactory results.
7. Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 1000 mm.
8. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
9. Allow applied coat to dry before next coat is applied.
10. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

3.4 Finishing mechanical and electrical equipment

1. Refer to Section 23 05 53 and Section 26 05 53 for schedule of colour coding and identification banding of equipment, duct work, piping, and conduit.
2. Unless otherwise specified, paint all unfinished conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and texture to match adjacent surfaces in the following areas:
 - 2.1. Exposed-to-view exterior and interior areas.
 - 2.2. High humidity interior areas.
 - 2.3. Boiler room, mechanical and electrical rooms.
3. In unfinished areas leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish; touch up scratches and marks.
4. Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
5. Do not paint over nameplates.
6. Paint the inside of light valances gloss white.
7. Paint disconnect switches for fire alarm system and exit light systems in red enamel.
8. Paint red or band all fire protection piping and sprinkler lines in accordance with mechanical specification requirements. Keep sprinkler heads free of paint.
9. Paint yellow or band all natural gas piping in accordance with mechanical specification requirements.
10. Backprime and paint face and edges of plywood service panels for telephone and electrical equipment before installation to match adjacent wall surface. Leave equipment in original finish

except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

11. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings that were removed prior to finishing.

3.5 Field quality control

1. Acceptable Surfaces:
 - 1.1. No visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm.
 - 1.2. No visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm.
 - 1.3. No visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.
 - 1.4. Uniformity of colour, sheen, texture, and hiding across full surface area.

3.6 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

Ω End of Section

SECTION 10 11 00

Visual display units

Part 1 General

1.1 Section includes

1. Marker boards.
2. Tack boards.
3. Accessories.

1.2 Related requirements

1. Section 09 21 16 - Gypsum Board Assemblies: Preparation of substrate and adjacent work to receive work of this section.
2. Section 06 10 00 - Rough Carpentry: Wood grounds.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the Work with installation of wall outlets and switches that are within the wall space for Work of this section.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on marker boards, trim and accessories.
3. Shop Drawings: Indicate wall elevations, dimensions, joint locations, special anchor details.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.
2. Operation and Maintenance Data: Include data on stain removal and regular maintenance cleaning.

1.7 Delivery, storage, and handling

1. Section 01 61 00: Transport, handle, store, and protect products.
2. Protect pre-finished surfaces with wrapping.

1.8 Warranty

1. Section 01 78 00: Warranties.
2. Provide a ten (10) year warranty to include coverage for failure to meet specified requirements.

3. Warranty: Include coverage of marker board surfaces from discolouration due to cleaning and crazing or cracking.

Part 2 Products

2.1 Manufacturers

1. Supply and install all white/tack boards used as separate unit or in combination with one another throughout the building to the sizes and locations shown on drawings complete with all aluminum trim members.
2. The following specifications are based on ASI Visual Display Products Inc., Mississauga, Ontario. Equal material by Shanahan's Manufacturing Ltd., Global and Martack Specialties Ltd., are approved alternates. Subject to meeting the following specifications and if samples are submitted to the Consultant no later than 5 days prior to tender closing this project.
3. Substitutions: Refer to Section 01 25 00.

2.2 Marker board Materials

1. White board system: equivalent to Vitrite, by ASI Visual Display Products Inc., Mississauga, Ontario. Orientation and combination of white board and tack board shall be as noted on the drawings.
 - 1.1. Face Panel – 28 gauge high quality enameling steel base with a porcelain enamel writing surface fused to a ground coat of not less than 0.076mm (.003") nor more than 0.127mm (.005") after firing at temperatures between 700 degrees C (1300 degrees F) and 800 degrees C (1500 degrees F) in accordance with the Porcelain Enamel Institute Standards PEI S104 as regards to durability, smoothness of texture, colour continuity and a gloss factor of 6 – 8 as measured by 45 degree glossometer.
 - 1.2. Core – 11.1mm (7/16") impregnated sound absorbing fiberboard laminated under heat and pressure to face panel and back sheet utilizing adhesives that ensure rupturing of the component materials before failure of joint contact surfaces.
 - 1.3. Back up balancing sheet – 28-gauge zinc coated stretcher leveled steel in one unjointed section. Overall thickness of Whiteboard lamination shall be 12.7mm (1/2").
 - 1.4. Tackboards: 12.7mm (1/2") factory prelaminated consisting of 6mm (1/4") thick a.s.p. Forbo Tackable laminated to 6mm (1/4") particle board or masonite substrate under mechanical pressure in maximum panel sizes of 1219mm x 2438mm (4'0" x 8'0"). Bonding of materials by a waterproof adhesive that will not delaminate or rupture at the contact surfaces. All tackboards shall meet the minimum requirements of the applicable building code and/or Ontario Fire Marshall's office.
 - 1.5. White marker boards shall be to sizes and locations shown on the drawings.
2. Aluminium Trim: Architectural School Products Architectural Series 400. Aluminum to be 6063-T5 alloy with clear etched and anodized 0.51mm (.002") stain finish free from extruding draw marks and surface scratches.
 - 2.1. Perimeter – Architectural School Products No. 205 trim for all tackboards and vertical jambs of white boards and chalkboards 19mm (3/4") exposed face.
 - 2.2. Divider Bar – Architectural School Products No. 207 trim for adjacent white board/tack board panels and adjacent tack board/tack board panels of elevations greater than 8'-0" – 12.7 mm (1/2") exposed face and weight of approximately 113g (.25 lbs) per lineal foot.
 - 2.3. Marker Tray: a.s.p. No. 212 triangular box section for Whiteboard elevations only complete with contour fitting end castings – 102mm (4") projection from finished wall (86mm (3 3/8") projection from face of board) and weight of approximately 454g (1.0 lbs.) per lineal foot.

- 2.4. Spline: whiteboards to be joined together by the use of a 14-gauge x 25.4mm (1") wide steel spline and an extruded polyvinyl slotted insert to ensure a flush butt joint with a hairline appearance.

2.3 Accessories

1. Adhesives: Type used by manufacturer.
2. Map Supports: Formed aluminum sliding roller brackets to fit map rail.
3. Temporary Protective Cover: Sheet polyethylene, 0.2 mm thick.
4. Cleaning Instruction Plate: Provide written instructions for marker board cleaning on a metal plate fastened to perimeter frame near chalk rail.

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify dimensions, tolerances, and method of attachment with other work.
3. Verify that internal wall blocking is ready to receive work and positioning dimensions are as instructed by the manufacturer.
4. Verify flat wall surface for frame-less adhesive applied type.

3.2 Installation

1. Install marker boards to manufacturer's written instructions.
2. Establish bottom of perimeter frame at height noted on drawings above finished floor.
3. Secure units level and plumb.
4. Marker Boards:
 - 4.1. Butt panels tight with concealed spline to hairline joint.
5. Prior to commencement of erection, all surfaces to be checked for irregularities, trueness and rigidity and projections and defects to be reported immediately to the General Contractor for correction. On completion of the installation all materials and workmanship to be inspected for proper operation, rigidity and appearance, and any defective materials to be replaced with new materials prior to final inspection
6. The General Contractor to be responsible for providing a dry, warm storage area capable of being locked for storage of all materials. The Construction Manager shall unload all materials at the site and place in aforementioned storage room.
7. During installation utmost care to be taken by workers to ensure the protection of the work from damage by other trades until the building is ready for occupation and handed over the Owner.
8. Protection of all materials during the painting operation shall be carried out by the use of polyethylene covering which shall be the responsibility of the painting contractor.

3.3 Cleaning

1. Section 01 74 10: Cleaning installed work.
2. Remove protective material from surfaces.
3. Clean chalk board surfaces in accordance with manufacturer's written instructions, then cover chalk board surfaces with protective cover, taped to frame.
4. Remove temporary protective cover at date of Substantial Completion.

3.4 Protection

1. Section 01 78 23: Protecting installed work.
2. Protect finished Work from damage.

Ω End of Section

SECTION 10 28 00

Toilet, and bath Accessories

Part 1 General

1.1 Section includes

1. Toilet, bath, and washroom accessories.
2. Grab bars.

1.2 Related requirements

1. Section 08 80 00 – Glass and Glazing: Wall mirrors.
2. Section 09 30 00 - Ceramic Wall Tiling: Ceramic accessories.

1.3 Administrative requirements

1. Section 01 31 00: Project management and coordination procedures.
2. Coordination:
 - 2.1. Coordinate with other work having a direct bearing on work of this section.
 - 2.2. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.4 Action submittals

1. Section 01 33 00: Submission procedures.
2. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

1.5 Informational submittals

1. Section 01 33 00: Submission procedures.
2. Installation Data: Manufacturer's special installation requirements including special procedures.

1.6 Closeout submittals

1. Section 01 78 00: Submission procedures.

Part 2 Products

2.1 Products

1. Refer to schedule within this specification for details.
2. Substitutions: Refer to Section 01 25 00.

2.2 Description

1. Regulatory Requirements:
 - 1.1. Conform to CSA-B651 for accessibility requirements for the handicapped.

2.3 Materials

1. Sheet Steel: ASTM A1008/A1008M.
2. Stainless Steel Sheet: ASTM A167, Type 304.
3. Tubing: ASTM A269, stainless steel.
4. Adhesive: Contact type, waterproof.
5. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof.
6. Expansion Shields: Fibre, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.4 Fabrication

1. Weld and grind joints of fabricated components, smooth.
2. Form exposed surfaces from single sheet of stock, free of joints. Form surfaces flat without distortion. Maintain surfaces without scratches or dents.
3. Shop assemble components and package complete with anchors and fittings.
4. Provide steel anchor plates, adapters, and anchor components for installation.

2.5 Keying

1. Supply two (2) keys for each accessory to Owner.
2. Master key all accessories.

2.6 Finishes

1. Galvanizing: Hot-dip galvanized to appropriate grade for type and size of steel material indicated, coating thickness ASTM A123/A123M. Galvanize ferrous metal and fastening devices.
2. Shop Primed Ferrous Metals: Pre-treat and clean, spray apply one coat primer and bake.
3. Enamel: Pre-treat to clean condition, apply one (1) coat primer and minimum two (2) coats electrostatic baked enamel.
4. Chrome/Nickel Plating: ASTM B456, Type SC 2, polished finish.
5. Stainless Steel: Polished finish.
6. Back paint components where contact is made with building finishes to prevent electrolysis.

2.7 Components

1. Toilet tissue dispenser: supplied by Owner and installed by General Contractor.
2. Surface-mounted Roll Paper Towel Dispenser: supplied by Owner and installed by General Contractor.
3. Soap dispenser: supplied by Owner and installed by General Contractor.
4. Grab Bars: 38mm (1-1/2") x 1.2mm (18 gauge) tubing of stainless steel, 75 mm (3") diameter wall flanges, concealed screw attachment, flanges welded to tubular bar, provided with steel back plates and all accessories. Peened bar at area of hand grips. Grab bar material and anchorage to withstand downward pull of 2.2 kN.
 - 4.1. Acceptable Material: Bobrick Series No. B-6806. Horizontal: B6806.99 x 610mm (24"). 90o angled Bar: B-6856.99 or B-6846.99, legs to be minimum 760 mm (29-7/8") long to meet code requirements.
5. Robe hook Type 1: stainless steel with 50mm (2") projection.

- 5.1. Acceptable material: Model CBH 61 by Canadian Builders Hardware.
6. Feminine napkin disposal bin: stainless steel, surface-mounted unit, continuous hinged doors, self closing, graphic symbol "Napkin Disposal", removable stainless steel receptacles fitted with spring clip for deodorizer block.
- 6.1. Acceptable material: Model No. B-254 by Bobrick.
7. Framed tilt mirror: one-piece roll formed frame 3/4"x3/4", type 304 stainless steel angle with satin finish. Frame complete with integral stiffener on all sides. Reflective glazing 1/4" selected tempered glass mirror electrolytically copper-plated, edges protected with polyethylene padding 20 ga., galvanized steel back attached to frame, concealed beams, concealed wall hanger, theft resistant. Refer to elevations for sizes.
- 7.1. Acceptable material: Model No. B-293 fixed tilt for accessible washrooms or Consultant approved equal.
8. Stainless Steel Shelf: horizontal, surface wall mounted, Unit size 6" wide x 18" long.
- 8.1. Acceptable material: Model No B-296 Stainless Steel Shelf by Bobrick, or Consultant approved equal.
9. ~~Hand Dryers: Dyson Airblade V, sprayed Nickle HU02, or Consultant approved equal.~~
- 9.1. ~~Provide 22 ga. thick type 316 stainless steel protective shields behind hand dryers. Make protective shields 1070mm (42") high with top of shield 25mm (1") above the top of the hand dryer. Make shields 100mm wider on each side of the hand dryer. Fasten with tamperproof stainless steel screws.~~

Part 3 Execution

3.1 Examination

1. Section 01 71 00: Verify existing conditions before starting work.
2. Verify that field measurements are as instructed by the manufacturer.
3. Verify that site conditions are ready to receive work and dimensions are as indicated on Shop Drawings.
4. Verify exact location of accessories for installation.

3.2 Preparation

1. Deliver inserts and rough-in frames to site for timely installation.
2. Provide templates and rough-in measurements as required.

3.3 Installation

1. Install accessories to manufacturer's written instructions.
2. Install plumb and level, securely and rigidly anchored to substrate.

Ω End of Section