

**ARCHITECTURAL
SPECIFICATIONS
TENDER #11932T**

**STAYNER
COLLEGIATE INSTITUTE**

**Building Renovations -
Phase 2**

January 10, 2019



Contractors shall carefully examine and study all of the Contract Documents and shall visit the site of proposed work in order to satisfy themselves by examination as to all conditions relevant to the scope of work.

**McKnight Charron Limited
Architects**

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Refer to Mechanical Specification Index included herein

Electrical Specifications

Refer to Electrical Specification Index included herein

End of Section

1. INTRODUCTION

1.1 INVITATION

- 1.1.1 Simcoe County District School Board (the “**Owner**”) is soliciting Bids from prequalified general contractors to perform the work described in the Bid Documents (the “**Work**”) at **7578 Highway 26, Stayner, ON, L0M 1S0**. (the “**Place of the Work**”).

1.2 KEY INFORMATION

- 1.2.1 This Section provides a summary of some key information contained in the Bid Documents and is provided solely as a convenience. Bidders are urged to read all of the Bid Documents carefully and thoroughly to ensure they fully understand all of the terms and conditions, including all Contract requirements.
- (a) The Owner has scheduled a mandatory site meeting at **7578 Highway 26, Stayner, ON** on **January 16, 2019**, commencing at **11:00 a.m.**
 - (b) The Owner requires that **all Bidders and Mechanical and Electrical sub-trades** attend the mandatory site meeting.
 - (c) The deadline for submitting questions (the “**Question Deadline**”) is 10 days before the Submission Deadline.
 - (d) Questions must be submitted through the online portal www.bidsandtenders.ca
 - (e) Bids must be submitted online through the Portal BEFORE 1:30:00PM Local Time on **January 31, 2019** (the “**Submission Deadline**”).
 - (f) Bids must be irrevocable for a period of ninety (90) days starting from the day after the Submission Deadline (the “**Irrevocability Period**”).
 - (g) The form of bid security to be delivered as part of the Bid is **digital bid bond in the amount of 10%**, no other form of bond is acceptable. Bids submitted without the digital bond will be considered noncompliant.
 - (h) The successful bidder is permitted to commence work on site as of **Monday, April 1, 2019**.
 - (i) The successful Bidder will be required to achieve Substantial Performance of the Work by **August 23, 2019**.
 - (j) The Bid Coordinator is Justin Apokremiotis, Purchasing Supervisor, at “japokremiotis@scdsb.on.ca”.

1.3 PREQUALIFICATION

- 1.3.1 The following general contractors are prequalified to submit a Bid (each a “**Prequalified Contractor**”):

| | | |
|--|----------------|--|
| Anacond Contracting Inc. | (905) 660-7226 | info@anacond.ca |
| Aquicon Construction | (905) 458-1313 | purchasing@aquicon.com |
| Bertram Construction (Ontario) Ltd. | (705) 726-0254 | lisa@bertram.ca |
| Brown Daniels Associates Inc. | (416) 251-1757 | brad@browndaniels |
| Dawson Contracting (Barrie) Ltd. | (705) 726-9441 | dawsoncontracting@bellnet.ca |
| Deciantis Construction Limited | (905) 884-5131 | john@deciantisconstruction.ca |

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| | | |
|---|----------------|--|
| Devlan Construction Ltd. | (519) 763-5800 | andrew@devlan.com |
| Everstrong Construction Ltd. | (905) 878-7295 | george@everstrongconstructionltd.com |
| Gateman-Milloy Inc. (multiple) | (519) 748-6500 | info@gatemanmilloy.com |
| Greystone Project Management Inc. | (705) 789-1418 | greystone@greystoneconstruction.ca |
| JR Certus Construction Co. Ltd. | (647) 494-0150 | david.aquino@jrcertus.com |
| Les Bertram & Sons (1985) Limited | (705) 728-0077 | info@lesbertramandsons.ca |
| Lisgar Construction Company | (905) 857-2543 | laurie@lisgarconstruction.ca |
| M.J. Dixon Construction Ltd. | (905) 270-7770 | estimating@mjdixon.ca |
| Percon Construction Inc. | (416) 744-9967 | info@perconconstruction.com |
| Pre-Eng Contracting Ltd. | (905) 738-6866 | info@pre-eng.com |
| Quad Pro Construction Inc. | (289) 597-0173 | info@quad-pro.ca |
| Quinan Construction Limited | (705) 325-7704 | mike.unwin@quinan.ca |
| R.J.B. Construction (1989) Ltd. | (905) 895-8144 | rjbcon@hotmail.com |
| Rutherford Contracting Ltd. | (905) 726-4888 | tenders@ruthcon.ca |
| Shertine Construction Limited | (705) 444-0667 | l.redmond@shertine.com |
| Silver Birch Contracting Ltd | (905) 952-3856 | estimating@birchcon.ca |
| Steelcore Construction Ltd. | (416) 282-4888 | ttzovolos@steelcore.ca |
| Tambro Construction Ltd. | (519) 766-1234 | info@tambro.com |
| W.E. Marshall Construction (1986) Ltd. | (705) 444-3653 | estimating@wemarshall.ca |
| W.S. Morgan Construction Limited | (705) 746-9686 | tender@wsmorgan.com |

1.3.2 The following **Mechanical** Subcontractors are prequalified for the Work:

| | | |
|--|----------------|--|
| Anvi Services Ltd. | (905) 997-3895 | office@anviservices.com |
| CEC Mechanical Ltd. | (905) 713-3711 | bhanlon@beswickgroup.com |
| Division 15 Plumbing & Mechanical Inc. | (705) 424-0203 | katherine@division15.ca |
| H.S. St. Amant & Sons Inc. | (705) 549-7227 | kevin@stamantandsons.com |
| JMR Mechanical & Electrical Contractors | (519) 235-1516 | jmr.electric@jmrelectric.ca |
| Litek Mechanical Services Inc. | (905) 265-1788 | litekmechanicalservice@bellnet.ca |
| Marnoch Electrical Services Inc. (MFM) | (416) 775-1050 | jware@mfm-service.ca |
| Pipe All Plumbing & Heating Ltd. | (905) 851-1927 | office@pipeall.ca |
| Sexton's Mechanical Limited | (705) 728-4040 | paul@sextonsmechanical.com |
| Soan Mechanical Ltd | (519) 455-1530 | andy@soanmechanical.com |
| Stellar Mechanical Inc | (416) 748-8088 | tony@stellarmechnical.ca |
| Swift Mechanical Services Inc. | (905) 265-8777 | info@swiftmech.com |
| Western Mechanical Limited | (705) 737-4135 | bbalaban@westernmechanical.net |

1.3.3 The following **Electrical** Subcontractors are prequalified for the Work:

| | | |
|--|----------------|--|
| Abercrombie Electric Company Ltd. | (705) 728-5509 | abercrombie.electric@bellnet.ca |
| B.C. North Electrical | (705) 645-7284 | craig@bcnorthelectric.com |
| Brian's Little Electric Ltd. | (705) 252-7159 | littleelectric@rogers.com |
| C. Georges Electrical Inc. | (705) 722-0421 | cross@cgelectric.ca |
| CEC Services Limited | (905) 713-3711 | dvanloon@beswickgroup.com |
| Horse Power Electrical Corp. | (705) 329-4998 | mmacchia@hpemc2.com |
| J.M.R. Electric Ltd. | (519) 235-1516 | jmr.electric@jmrelectric.ca |

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| | | |
|---|----------------|--|
| KB Electrical **1693377 Ontario Inc. | (705) 739-0819 | keith.bartley@kbelectrical.ca |
| Marnoch Electrical Services Inc | (416) 775-1050 | jware@mfmsservice.ca |
| Minnings Electric Service Ltd. | (705) 322-1307 | minningselectric@gmail.com |
| N.S.E. 2000 INC. | (705) 325-3738 | nse2000@bellnet.ca |
| Pentor Electric | (705) 549-5078 | pentor@rogers.com |
| Star Electrical Services Inc. | (905) 799-3883 | info@storelectrical.ca |
| Walker's Electric 2000 | (705) 526-7825 | jeremy@walkers.on.ca |
| Wallwin Electric Services Ltd. | (705) 726-1859 | john.holloway@wallwinelectric.com |
| Western Electrical Limited | (705) 737-4135 | bbalanban@westernmechanical.net |

1.3.4 The following **Roofing** Subcontractors are prequalified for the Work:

| | | |
|--|----------------|--|
| Atlas - Apex Roofing Inc | (416) 421-6244 | inquiries@atlas-apex.com |
| Cordeiro Roofing Ltd | (416) 234-9901 | wayne@cordeiroroofing.com |
| Crawford Roofing Corporation | (416) 787-0649 | Nelson.Rites@crawfordroofing.ca |
| D.J. Peat Roofing & Sheet Metal Ltd. | (519) 371-3888 | john@djpeatroofing.ca |
| Dean-Chandler Roofing Limited | (416) 751-7840 | kengoodale@deanchandler.ca |
| Flynn Canada Ltd. | (905) 671-3971 | Jim.Guzik@flynncompanies.com |
| Lafleche Roofing | (705) 329-4485 | markg@laflecheroofing.com |
| Midhurst Roofing Limited | (705) 721-8383 | johanna@midhurtroofing.ca |
| Nortex Roofing LTD. | (416) 236-6090 | sandra@nortexroofing.com |
| Provincial Industrial Roofing and Sheet Metal | (905) 669-2569 | Fverna@provincialroofing.com |
| Solar Roofing & Sheet Metal LTD. | (416) 658-6045 | paulo@solarroofing.ca |
| Sproule Roofing North Ltd | (416) 720-5841 | gordon@srouleroof.ca |
| Trio Roofing Systems Inc. | (905) 456-1688 | paulo@trioroofing.ca |
| Viana Roofing & Sheet Metal Limited | (416) 763-2664 | info@vianarooofing.com |

1.3.5 The Owner reserves the right to issue one or more addenda naming additional Prequalified Contractors and/or additional prequalified Subcontractors.

1.3.6 Only Prequalified Contractors are eligible to participate in this Bid Process and to submit a Bid. Submissions received from those who are not a Prequalified Contractor will not be considered.

1.4 THE BID CONTRACT

1.4.1 The Bidders and the Owner acknowledge it is their intention to create a process contract, sometimes referred to as "Contract A" (the "**Bid Contract**"), between the Owner and each Bidder whose Bid meets all Mandatory Requirements. The Bidders and the Owner further acknowledge that if a Bid Contract is created between the Owner and one or more Bidders, the terms of the Bid Contract are represented by the Bid Documents and include an obligation on the successful Bidder, if any, to sign the Contract.

1.5 BIDDERS' EXPENSES

1.5.1 Bidders shall bear all costs and expenses incurred by them in any way related to any aspect of their participation or intended participation in this Bid Process including, without limitation, all costs and expenses related to a Bidder's involvement in:

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- (a) due diligence, investigations, and information gathering processes;
- (b) attendances and/or participation at any and all site visits and/or meetings;
- (c) the preparation and submission of a Bid and responding to Requests for Additional Information.

2. DEFINITIONS

Capitalized terms used in the Instructions to Bidders and not otherwise defined in this Article or elsewhere in these Instructions to Bidders shall have the meanings ascribed to them in the Definitions to the Contract. All references in the Instructions to Bidders to “Article”, “Section” or “paragraph” shall, unless specifically indicated otherwise, refer to an Article, Section or paragraph of these Instructions to Bidders.

- 2.1.1 **“Adjusted Bid Price”** has the meaning set out in the table in paragraph 10.4.1.
- 2.1.2 **“Bid”** means all documents and information submitted through and/or uploaded to the Portal by a Bidder in response to and in accordance with these Instructions to Bidders, together with the documents and information specified in Section 9.4 and Section 10.2, where applicable.
- 2.1.3 **“Bidder”** means a Prequalified Contractor that participates in this Bid Process, whether or not it submits a Bid. The term **“Bidder”** also includes a Prequalified Contractor prior to the submission of its Bid.
- 2.1.4 **“Bid Contract”** means the contract described in paragraph 1.4.1 for the evaluation of Bids and the execution of the Contract, if any.
- 2.1.5 **“Bid Coordinator”** is the person identified as such in paragraph 1.2.1(j).
- 2.1.6 **“Bid Documents”** means the documents listed in paragraph 3.2.1.
- 2.1.7 **“Bid Price”** has the meaning set out in paragraph 9.2.1.
- 2.1.8 **“Bid Process”** means the procurement process described in the Bid Documents which commences with the issuance of these Instructions to Proponents and ends on the earliest of the following:
 - (a) the date on which the Contract is signed;
 - (b) the date on which the Bid Process is cancelled;
 - (c) the day after the expiry of the Irrevocability Period.
- 2.1.9 **“Board”** means the Board of Trustees of the Owner.
- 2.1.10 **“Conflict of Interest”** has the meaning set out in paragraph 13.2.1.
- 2.1.11 **“Contract”** means the written agreement to be signed between the Owner and the successful Bidder, in the form of CCDC 2 – 2008 stipulated price contract, as amended by Supplementary Conditions.
- 2.1.12 **“Evaluation Score”** has the meaning set out in paragraph 10.4.1.
- 2.1.13 **“Irrevocability Period”** has the meaning set out in paragraph 1.2.1(f).
- 2.1.14 **“Local Time”** means the time measured and recorded on the Portal.
- 2.1.15 **“Mandatory Requirements”** means the mandatory requirements listed in paragraph 10.3.1.
- 2.1.16 **“MFIPPA”** means the *Municipal Freedom of Information and Protection of Privacy Act* (Ontario).

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- 2.1.17 **“Owner”** means Simcoe County District School Board and includes its employees, agents, trustees, officers and directors, whether involved with the Bid Process or not, and includes the Board.
- 2.1.18 **“Place of the Work”** has the meaning set out in paragraph 1.1.1.
- 2.1.19 **“Portal”** has the meaning set out in paragraph 3.1.1.
- 2.1.20 **“Prequalified Contractor”** has the meaning set out in paragraph 1.3.1.
- 2.1.21 **“Question Deadline”** is the date identified as such in paragraph 1.2.1(c).
- 2.1.22 **“Reports”** has the meaning set out in paragraph 4.1.1.
- 2.1.23 **“Request for Additional Information”** has the meaning set out in paragraph 10.2.1.
- 2.1.24 **“Security Documents”** has the meaning set out in paragraph 9.3.1.
- 2.1.25 **“Submission Deadline”** is the date and time identified as such in paragraph 1.2.1(e).
- 2.1.26 **“Supplementary Conditions”** means the Supplementary Conditions for the CCDC 2 – 2008 stipulated price contract included on the Portal.
- 2.1.27 **“Work”** means the total construction and related services described in the Bid Documents.

3. BID DOCUMENTS

3.1 ACCESS TO THE BID DOCUMENTS

- 3.1.1 The Bid Documents will be made available to Bidders through the online digital bidding system established for this Bid Process on the website hosted by eSolutions Group Limited at “www.bidsandtenders.ca” (the **“Portal”**). The Portal will include all Bid Documents as well as Reports and other relevant notices, information and communications.
- 3.1.2 Each Bidder is solely responsible to ensure that it:
- (a) registers with and obtains access to the Portal; and
 - (b) has the appropriate software to access, input, download and upload contents from and to the Portal; and
 - (c) visits and reviews the Portal as frequently as is necessary to ensure that it has the most current information, documents and addenda.

Bidders are solely responsible for visiting and checking the Portal for new content and the Owner accepts no responsibility for any Bidder lacking any documents or information posted to the Portal.

- 3.1.3 If there is a conflict or inconsistency between an electronic version of any document included or posted to the Portal and any other version of the same document, whether in electronic or paper form, the electronic version on the Portal shall govern.

3.2 THE BID DOCUMENTS

- 3.2.1 Bidders should ensure they have and/or have access to all of the documents listed below (collectively the **“Bid Documents”**). A Bid will be deemed to have been prepared on the basis of all Bid Documents issued and posted to the Portal prior to the Submission Deadline, and the Owner

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accepts no responsibility for any Bidder lacking or not being able to access any part of the Bid Documents.

- (a) Instructions to Bidders (this document).
- (b) Supplementary Conditions.
- (c) Specifications.
- (d) Drawings.
- (e) Addenda, if any.

3.2.2 Bidders should inform the Bid Coordinator immediately if any documents are missing or incomplete and/or upon finding any discrepancies or omissions in the Bid Documents.

3.2.3 The Bid Documents are made available only for the purpose of submitting Bids for the Work. Availability and/or use of the Bid Documents does not confer a license or grant for any other purpose.

4. BIDDERS' DUE DILIGENCE

4.1.1 In addition to the Bid Documents, the Portal may include the Owner's information, data and environmental, geotechnical or other reports prepared or obtained with respect to the Place of the Work (collectively the "**Reports**"). The Reports should not be considered a representation of the conditions of the entire Place of the Work and are provided for general information and guidance purposes only. The Owner does not guarantee the accuracy or completeness of the Reports nor assumes any responsibility for any interpretations or conclusions that Bidders may make or draw from the Reports.

4.1.2 Nothing in this Bid Process or in the Bid Documents or in the Reports is intended to relieve Bidders from undertaking their own research, investigations or other due diligence, or forming their own opinions and conclusions with respect to the Work, the Place of the Work, the Bid Documents, the Contract, and all other matters related to this Bid Process. The Owner (a) does not accept or assume any responsibility for any interpretations or conclusions that Bidders may make or draw from the Bid Documents or the Reports, (b) does not represent, warrant or guarantee that the Bid Documents or the Reports are complete, accurate or comprehensive or exhaustive, and (c) assumes no responsibility for the completeness or accuracy of the Bid Documents or the Reports, or anything else provided or made available by the Owner during this Bid Process.

4.1.3 No allowances will be made for additional costs and no claims will be entertained in connection with:

- (a) conditions which could reasonably have been ascertained by the Bidders through investigation or other due diligence undertaken prior to the Submission Deadline; and/or
- (b) Work which is required and which is reasonably inferable from the Bid Documents and/or the Reports as being necessary.

5. COMMUNICATIONS, QUESTIONS AND ADDENDA

5.1 COMMUNICATIONS

- 5.1.1 Except as may be permitted in the Bid Documents, Bidders are not to communicate with or otherwise contact the Owner regarding this Bid Process at any time before execution of the Contract, if any. A Bidder's failure to comply with this paragraph may result in the disqualification of the Bidder and the rejection of its Bid.
- 5.1.2 Except where provided otherwise in these Instructions to Bidders, all communications (including questions) with the Owner permitted by this Bid Process are to be in writing and are to be submitted online through the Portal.

5.2 BIDDERS' QUESTIONS

- 5.2.1 Bidders are encouraged to ask questions or request clarification with respect to any part of this Bid Process or any Bid Documents which do not appear to be clear. Questions received by the Question Deadline will be reviewed and if the Owner believes that a response is warranted, it will include the question and its answer in an addendum. Questions received after the Question Deadline may not be considered and may not be answered, although the Owner reserves the discretion, but has no obligation, to consider and respond to questions received after the Question Deadline. In responding to questions the Owner may answer similar questions from different Bidders only once, may edit or rephrase the questions, and may ignore questions which, in the Owner's opinion, do not require a response.

5.3 ADDENDA

- 5.3.1 This Bid Process and the Bid Documents may be amended only by written addendum posted to the Portal. Answers, responses, clarifications, instructions or any other information provided by any other means, by any person, in whatever context or setting, will not in any way bind the Owner or amend this Bid Process or any Bid Documents, and are not to be relied upon by any Bidder, unless and until they are posted to the Portal in the form of an addendum.
- 5.3.2 Addenda will be posted on the Portal only and will not be sent or otherwise distributed to the Bidders. Bidders are solely responsible:
- (a) to visit and review the Portal for addenda, and the Owner shall not be responsible if any addenda are not obtained by a Bidder;
 - (b) to ensure they have received and that their Bid incorporates all addenda issued and posted to the Portal before the Submission Deadline and takes into account all resulting costs.

Bidders will be required to confirm their Bid incorporates all addenda by so indicating in their Bid.

6. MANDATORY SITE MEETING

6.1 MANDATORY ATTENDANCE

- 6.1.1 The Owner has scheduled a mandatory site meeting at the location, date and time specified in paragraph 1.2.1(a). The purpose of the meeting is to review the Bid Process and to provide those in attendance an opportunity to ask questions and tour the Place of the Work.

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6.1.2 Attendance at the site meeting is mandatory:

- (a) for Bidders;
- (b) Mechanical sub-contractors
- (c) Electrical sub-contractors

All persons attending the site meeting will be required to sign an attendance log to confirm their attendance.

6.2 CONSEQUENCES OF FAILING TO ATTEND THE MANDATORY SITE MEETING

6.2.1 Bids received from Bidders who fail to attend the mandatory site meeting, as determined from the attendance log, will not be considered.

6.2.2 Where the Owner has required that prequalified Subcontractors attend the mandatory site meeting, as indicated in paragraph 6.1.2(b), then, Bids that fail to carry a prequalified Subcontractor that attended the mandatory site meeting, as determined from the attendance log, will not be considered.

6.3 INFORMATION OBTAINED AT THE MANDATORY SITE MEETING

6.3.1 Each Bidder acknowledges and agrees that:

- (a) notwithstanding the Owner may give answers and may provide information during the site meeting, such answers and information, whether in verbal or in written form, will not in any way bind the Owner or amend this Bid Process or any Bid Documents, and are not to be relied upon in any way by a Bidder, except and only to the extent expressly confirmed in an addendum;
- (b) anything said, written or done by the Owner or any other person, and any views or comments expressed in response to anything said or done during the site meeting, will not in any way bind the Owner or amend this Bid Process or any Bid Documents, and are not to be relied upon in any way by a Bidder except and only to the extent expressly confirmed in an addendum.

7. SITE INVESTIGATION BY BIDDERS

7.1.1 Each Bidder is solely responsible, at its own cost and expense, to carry out its own independent research and due diligence and to perform any investigations considered necessary by the Bidder to satisfy itself as to the existence and/or locations of utilities and underground services and all other existing conditions, circumstances and limitations affecting the Place of the Work, the Work, the Bid Documents, the Contract, and all other matters related to this Bid Process. The Bidders' obligations set out in this paragraph apply irrespective of the information contained in the Bid Documents or the Reports or that is made available to the Bidders during this Bid Process.

7.1.2 Bidders shall not undertake any investigation activities at the Place of the Work except as provided in this Article 7.

7.1.3 Bidders who would like an opportunity to undertake an investigation of the Place of the Work must submit an e-mail request to the Bid Coordinator. Such request must be received at least 2 business

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days before the Bidder's proposed date for the proposed investigation, provided that all investigations must be completed by the Question Deadline. The request must include:

- (a) the proposed date and time and alternate date and time for the proposed investigation;
- (b) the anticipated duration of the proposed investigation;
- (c) names, titles and contact information of who will be attending;
- (d) details of the proposed investigation, including who is proposed to carry out the investigation;
- (e) area(s) of the Place of the Work for which access is requested;
- (f) such other information as the Owner may reasonably require.

A Bidder's request will not be complete and an appointment for the investigation will not be scheduled until all of the required information has been provided.

7.1.4 If the Owner approves a Bidder's request to investigate the Place of the Work, the Owner will issue a written notification of the date and time on which the Bidder may attend at the Place of the Work, as well as the investigation activity(ies) which the Bidder is authorized to undertake, and the duration of such activity(ies). A representative of the Owner may attend to monitor the Bidder's activities.

7.1.5 Bidders acknowledge that unforeseen circumstances may arise and the Owner may, in its sole discretion, cancel, reschedule and/or modify the Bidder's visit and/or investigation activities on short notice or no notice to the Bidder.

7.1.6 Each Bidder acknowledges and agrees:

- (a) that anything said, written or done by the Owner or its representatives, and any views or comments expressed in response to anything said or done during the investigation of the Place of the Work will not in any way bind the Owner or amend this Bid Process or any Bid Documents, and are not to be relied upon by any Bidder;
- (b) to waive any and all right to contest, claim, complain, protest and/or dispute this Bid Process based on the fact that findings, information, results or data may have been obtained by another Bidder as a result of that Bidder's investigation of the Place of the Work, that were not obtained by, shared with, or provided to other Bidders.

7.1.7 Bidders shall, for their own forces and for their agents, consultants, contractors, subcontractors and all others attending at the Place of the Work with them or on their behalf:

- (a) assume overall responsibility for compliance with all aspects of the applicable workers' compensation and health and construction safety legislation and all related rules, regulations and practices, and shall ensure that appropriate occupational health and safety instruction and training are provided to all those attending the Place of the Work;
- (b) perform only investigations authorized by the Owner;
- (c) avoid disturbing and take all reasonable steps necessary to promote and maintain the safety of the occupants of the Place of the Work and any adjacent properties and the public in general;
- (d) respect and comply with local regulations and the Owner's requirements regarding permitted work hours and noise levels;

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- (e) indemnify and save the Owner harmless from, and be responsible for, all claims, demands, losses, costs or damages related to or arising from any activities performed by the Bidder or anyone attending with or on behalf of the Bidder at the Place of the Work, whether or not authorized by the Bidder or the Owner.

8. DESIGNATED SUBSTANCES

- 8.1 Without limiting the obligations of the bidders set out in Article 5, where the Place of the Work is within or part of an existing building, bidders should note they may encounter designated substances such as lead, mercury, silica, asbestos-containing material (“ACM”), benzene, arsenic, etc. If applicable, a list of designated substances present at the Place of the Work has been provided to all bidders and, if ACM is included in the list of designated substances, a report has also been provided indicating the condition and location of any ACM that may be present at the Place of the Work (collectively the “OHS Reports”).
- 8.2 In carrying out the Work under the Contract, bidders shall ensure they do not handle, deal with, disturb or remove any designated substance whether identified in the OHS Reports or not, unless included in the Work required by the Bid Documents. Should a bidder determine, prior to the Closing Date, that the Work cannot be completed without handling, dealing with, disturbing or removing any designated substance identified in the OHS Reports (and the Work does not otherwise require the bidder to handle, deal with, disturb and/or remove such substance), it shall immediately notify the Owner and the Consultant in writing so that, if necessary, instructions and/or clarifications may be issued in the form of an addendum.
- 8.3 All information provided to or obtained by bidders in connection with this bid process, including all Reports, Data and the OHS Reports, are and shall remain the property of the Owner and must be treated as confidential whether or not a contract is awarded, and which confidentiality obligations shall survive termination of the bid process. Such information is not to be used for any purpose other than submitting a Bid.

9. INSTRUCTIONS FOR BID COMPLETION

9.1 BID COMPLETION

- 9.1.1 Bids which are completed and/or submitted by any means other than as set out in this Article 9 will not be considered.
- 9.1.2 Bidders shall:
 - (a) provide, input, post and/or upload all requested information and shall fill in all spaces and blanks on the Portal, as provided in Section 9.2; and
 - (b) submit the Security Documents described in Section 9.3 in accordance with and as provided in Section 9.4.
- 9.1.3 Bidders shall ensure all required information and documents are submitted through and uploaded / posted to the Portal BEFORE the Submission Deadline. Bidders who fail to do so before the Submission Deadline will be unable to submit their Bid.

9.2 INSTRUCTIONS

9.2.1 Bid Price. Bidders shall input in the space provided on the Portal the fixed, all-inclusive lump sum price for the Work (the “**Bid Price**”). The Bid Price shall exclude the Harmonized Sales Tax (HST) but shall include all other applicable taxes and duties.

9.2.2 Listing Subcontractors.

- (a) If required, Bidders shall input a list of the Subcontractors proposed to perform or supply an item of the Work identified on the Portal. Failure to do so may result in the Bid being declared non-compliant.
- (b) Where the Owner has prequalified one or more Subcontractors to perform or supply an identified item of the Work, Bidders shall select only a prequalified Subcontractor to perform or supply that item of Work. Failure to do so may result in the Bid being declared non-compliant.
- (c) Where the Owner has required prequalified Subcontractors attend the mandatory site meeting, as indicated in paragraph 6.1.2(b), Bidders shall select and carry only a prequalified Subcontractor that attended the mandatory site meeting, as determined from the attendance log. Failure to do so will result in the Bid being declared non-compliant.
- (d) Where a Bidder lists “own forces” in place of a Subcontractor, the Bidder shall perform such item of the Work with its own forces. In such case the Owner reserves the right to obtain information from the Bidder and from third parties respecting the qualifications and experience of the Bidder’s own forces for such item of the Work. If the Owner determines, acting reasonably, that the Bidder’s own forces are not qualified or experienced to perform such item of the Work, the Owner may declare the Bid non-compliant.

9.2.3 Unit, Separate, Itemized and Alternative Prices. If required, Bidders shall submit the following prices, all of which shall exclude the Harmonized Sales Tax (HST) but shall include all other applicable taxes and duties:

- (a) unit prices;
- (b) separate prices for work, if any, which is not included in the Bid Price and which the Owner may add for the amount(s) indicated;
- (c) itemized prices for Work, if any, which is included in the Bid Price and which the Owner may delete for the amount(s) indicated;
- (d) alternative prices for work, if any, which is not included in the Bid Price and which the Owner may substitute for Work which is included in the Bid Price for the amount(s) indicated.

The Owner reserves the right to accept or reject any or all unit, separate, itemized and alternative prices submitted, and such prices shall remain in effect for the duration of the Contract.

9.3 SECURITY DOCUMENTS

9.3.1 Each Bidder shall submit the form of bid security specified or permitted in paragraph 1.2.1(g), as further described in paragraph 9.3.2. Where applicable, Bidders shall also submit the agreement to bond / surety’s consent specified in paragraph 9.3.3 (the bid security and, where applicable, the agreement to bond / surety’s consent are collectively referred to as the “**Security Documents**”).

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9.3.2 Bid Security.

- (a) Where the bid security specified in paragraph 1.2.1(g) is a digital bid bond, the digital bid bond shall be in the amount of 10% of the Bid Price in the form CCDC 220 – 2002 naming “Simcoe County District School Board” as obligee and issued by a surety licensed to conduct surety and insurance business in Canada. The bid bond shall remain valid for at least the duration of the Irrevocability Period. No other form of bid bond is acceptable.

The bid security of the successful Bidder will be retained by the Owner as compensation towards the damages the Owner will suffer should the successful Bidder fail to sign the Contract and/or fail to provide the specified performance security and/or otherwise breach the Bid Contract.

- 9.3.3 Agreement to Bond / Surety’s Consent. Each Bidder that submits bid security in the form of a digital bid bond shall also submit an agreement to bond or surety’s consent issued by the same surety that provides the digital bid bond, undertaking to provide a performance bond and a labour and material payment bond, each in the amount of fifty percent (50%) of the Bid Price. The agreement to bond / surety’s consent shall remain valid for at least the duration of the Irrevocability Period.

- 9.3.4 Bidders shall include the costs of all Security Documents in their Bid Price.

9.4 DELIVERY OF THE SECURITY DOCUMENTS

- 9.4.1 Each Bidder that intends to submit bid security in the form of a digital bid bond shall:

- (a) upload or post the digital bond described in paragraph 9.3.2(a) to the Portal; and
(b) upload or post to the Portal a scanned copy (in “pdf” format) of the agreement to bond or surety’s consent described in paragraph 9.3.3.

- 9.4.2 Bids that do not comply with this Section 9.4 will be declared non-compliant.

9.5 BID IRREVOCABILITY

- 9.5.1 Each Bid shall be irrevocable and shall remain open for consideration by the Owner for the duration of the Irrevocability Period.

10. EVALUATING BIDS

10.1 GENERAL

- 10.1.1 Bids will be reviewed and evaluated by the Owner in private.

- 10.1.2 Notwithstanding anything else contained in the Bid Documents, the award of the Contract, if any, shall be subject to the approval of the Board, in its sole and unfettered discretion. Bidders shall have no claims whatsoever against the Owner or the Board arising out of the exercise of authority by the Board, and/or in the event the Owner, in its sole and unfettered discretion, and for any or no reason, decides not to award the Contract.

10.2 REQUESTS FOR ADDITIONAL INFORMATION

- 10.2.1 The Bid Coordinator, on behalf of the Owner, may contact any one or more Bidders to request clarification of any information or documents submitted as part of a Bid, or to request supplementary

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information (collectively, “**Request for Additional Information**”), without any obligation to make the same or any Request for Additional Information of any other Bidder. Notwithstanding the preceding sentence, the Owner has no obligation to make any Request for Additional Information.

10.2.2 Bidders shall respond to all Requests for Additional Information within the time and in the manner stipulated in each Request for Additional Information, and any response received will form an integral part of a Bidder’s Bid. If a Bidder fails to respond to a Request for Additional Information, its Bid will be considered and evaluated based solely on the original Bid contents submitted.

10.2.3 A Bidder’s response to a Request for Additional Information shall not be an opportunity for the Bidder to either correct errors or to change its Bid in any substantive manner. Subject to that, information, prices, rates and documents submitted in response to a Request for Additional Information shall form part of a Bidder’s Bid.

10.3 MANDATORY REQUIREMENTS

10.3.1 Subject to paragraph 10.3.2, only Bids which are submitted through the Portal before the Submission Deadline and which meet all of the mandatory requirements listed below (collectively, the “**Mandatory Requirements**”) on a “pass/fail” basis will be eligible for evaluation and award of the Contract:

- (a) the Bidder is a Prequalified Contractor; and
- (b) the Bidder attended the mandatory site meeting, as determined from the attendance log; and
- (c) where the owner has required the prequalified Subcontractors attend the mandatory site meeting, as indicated in paragraph 6.1.2(b). the Bid includes prequalified Subcontractor(s) that attended the mandatory site meeting, as determined by the attendance log;
- (d) the Bid includes the specified Security Documents and complies with Section 9.4; and
- (e) the Bid substantially complies with the requirements of the Bid Documents. In this respect, the Owner reserves the right, in its sole and unfettered discretion, to waive minor errors and matters of non-compliance contained in a Bid.

10.3.2 If all Bids fail at least one of the Mandatory Requirements the Owner, in its sole discretion, may:

- (a) evaluate one or more Bids and proceed with the Bid Process and treat such Bid(s) as having met all of the Mandatory Requirements; and/or
- (b) negotiate a Contract for the whole or any part of the Work with any Bidder; and/or
- (c) take any action in accordance with paragraph 12.2.1.

10.4 EVALUATION

10.4.1 Only Bids which pass all of the Mandatory Criteria or that are selected in accordance with paragraph 10.3.2(a) will be awarded points based on criteria set out below. The points awarded to each Bid will be its “**Evaluation Score**”.

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| Evaluation Criteria | Points Available |
|--|------------------|
| Bid Price offered, as it may be adjusted by the amount of any separate, itemized and/or alternative price(s) which the Owner, in its discretion, decides to accept (" Adjusted Bid Price "). For certainty, where the Owner does not accept any separate, itemized or alternative prices, the Adjusted Bid Price will be the same as the Bid Price. | 100 |
| MAXIMUM POINTS AVAILABLE | 100 |

10.4.2 A Bidder's Evaluation Score will be calculated in accordance with the formula below:

- (a) the Bidder with the lowest Adjusted Bid Price will be awarded 100 points;
- (b) the points to be awarded to each of the other Bidders will be calculated as follows:

$$\frac{\text{lowest Adjusted Bid Price}}{\text{other Bidder's Adjusted Bid Price}} \times 100 = \text{points awarded}$$

10.4.3 If there is a tie in the Evaluation Score of two or more Bids, the tie will be broken by a coin toss or by the drawing of lots performed by the Owner in the presence of the tied Bidders.

11. AWARD OF THE CONTRACT, DOCUMENTS TO BE DELIVERED, AND SIGNING THE CONTRACT

11.1 AWARD OF THE CONTRACT

11.1.1 Subject to receiving the approval of the Board, and subject to the other provisions of the Bid Documents, if the Owner decides to award the Contract it will issue an award letter to the Bidder that submitted the Bid which received the highest Evaluation Score.

11.2 DOCUMENTS TO BE DELIVERED

11.2.1 Within 10 business days of receiving an award letter from the Owner the successful Bidder shall deliver to the Owner:

- (a) where the Bidder submitted an agreement to bond / surety's consent, the Bidder shall deliver the performance bond and the labour and material payment bond described in the Bid Documents, the forms of such bonds to comply with the requirements of the Contract;
- (b) certified true copies of the insurance policies required by the Contract or certificates of insurance, at the option of the Owner;
- (c) the Bidder's current WSIB clearance certificate;
- (d) the Bidder's health and safety policy for the Work; and
- (e) a copy of the notice of project issued by the Ministry of Labour naming the Bidder as the "constructor" for the Work.

11.2.2 A Bidder's failure to comply with paragraph 11.2.1 will constitute a breach of the Bid Contract.

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11.3 SIGNING THE CONTRACT

11.3.1 The successful Bidder shall sign the Contract and shall deliver the signed original to the Owner within 10 business days of the Bidder's receipt of the execution copy of the Contract. A Bidder's failure to comply with this paragraph will constitute a breach of the Bid Contract.

12. OWNER'S RIGHTS

12.1 GENERAL

12.1.1 In addition to any other express rights contained in the Bid Documents or any other rights which may be implied in the circumstances, the Owner reserves the right to exercise any or all or a combination of the rights described in this Article. The Owner shall not be liable for any costs, expenses or damages incurred or claimed by a Bidder resulting from the Owner's exercise of any of its rights.

12.1.2 A Bidder's submission or the Owner's evaluation of any Bid, even where only one Bid is submitted before the Submission Deadline and even where only one Bid meets all Mandatory Requirements, will not obligate the Owner to accept any Bid, award the Contract, or proceed further with this Bid Process.

12.2 THE OWNER'S RIGHTS

12.2.1 The Owner may, in its sole discretion, and for any or no reason:

- (a) reject any or one or more or all Bids, even if only one Bid is received;
- (b) reject the whole or any part of any Bid;
- (c) accept the whole or any part of a Bid;
- (d) if only one Bid meets all of the Mandatory Requirements, elect to accept or reject all or any part of it;
- (e) cancel this Bid Process at any time before the award of the Contract;
- (f) cancel this Bid Process at any time before the award of the Contract and issue a new procurement process for work which is same or similar to the Work, with the same or different participants.

12.2.2 The Board reserves the right to disqualify a Bidder and reject a tender on the basis of: (I) past performance on previous Contracts awarded by the Simcoe County District School Board:(II) other relevant information that arises during this RFT Process, or (III) information provided by references.

12.2.3 The Owner reserves the right to:

- (a) waive minor errors and matters of non-compliance contained in a Bid;
- (b) adjust an Evaluation Score or reject a Bid on the basis of information received in response to a Request for Additional Information;
- (c) disqualify any Bidder whose Bid contains misrepresentations or any other inaccurate or misleading information relating to matters which the Owner, in its sole discretion, considers material;

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- (d) where the Owner has accepted any separate, itemized and/or alternative price(s) offered by the Bidders, the Owner reserves the right to award the Contract to other than the Bidder with the lowest Bid Price.

13. GENERAL

13.1 PROHIBITION ON LOBBYING AND COLLUSION

13.1.1 Bidders and their directors, officers, employees, consultants, agents, advisors and other representatives are strictly prohibited from engaging in conduct which is or could reasonably be considered as any form of political or other lobbying, or as an attempt to influence the outcome of this Bid Process. Without limiting the generality of the foregoing, and except as provided in the Bid Documents, no such person shall contact, communicate with or attempt to contact or communicate with, directly or indirectly and in any manner whatsoever, any staff, personnel or representative of the Owner or the Board in connection with this Bid Process, including for the purpose of:

- (a) commenting on, or attempting to influence the views on, the merits of the Bidder's Bid, or in relation to the Bids of other Bidders;
- (b) influencing or attempting to influence the evaluation of the Bids;
- (c) promoting the Bidder or its interests, including in preference to that of other Bidders;
- (d) commenting on or criticizing aspects of this Bid Process, the Bid Documents, the Work, or the Contract, including in a manner which may give the Bidder a competitive or other advantage over other Bidders;
- (e) criticizing other Bidders or the Bids of other Bidders.

13.1.2 Bidders and their directors, officers, employees, consultants, agents, advisors and other representatives are prohibited from communicating with or attempting to contact or communicate with, directly or indirectly and in any manner whatsoever, any information whatsoever regarding the preparation of a Bid to any other Bidder.

13.1.3 Failure of a Bidder to comply with this Section may result in the disqualification of the Bidder and the rejection of its Bid.

13.2 CONFLICT OF INTEREST

13.2.1 Bidders shall disclose all perceived, potential and actual Conflicts of Interest. For the purposes of this Bid Process, "**Conflict of Interest**" includes:

- (a) any situation or circumstances where, in relation to this Bid Process, the Work, and/or the Contract, the Bidder's other commitments, relationships or financial interests could or could be perceived to exert an improper influence over the objective, unbiased and impartial exercise of independent judgment by any member or representative of the Owner or the Board;
- (b) any situation or circumstances where any person employed by the Owner in any capacity:
 - (i) has a direct or indirect financial or other interest in any Bidder;
 - (ii) is an employee or a consultant to or under contract to any Bidder;

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- (iii) is negotiating or has an arrangement concerning future employment or contracting with any Bidder;
- (iv) has an ownership interest in or is an officer or director or partner of any Bidder.

13.2.2 If a Bidder discovers, before or after the Submission Deadline, any perceived, potential or actual Conflict of Interest, the Bidder shall immediately send a written statement to the Bid Coordinator describing the perceived, potential or actual Conflict of Interest, along with a written proposal that, if implemented, would address the identified perceived, potential or actual Conflict of Interest. The Owner will review the Bidder's written statement and proposal and, without limiting the generality of Article 12, the Owner may, in its sole discretion:

- (a) disqualify the Bidder from participating in this Bid Process and reject its Bid;
- (b) waive any and all perceived, potential or actual Conflict of Interest upon such terms and conditions as the Owner, in its sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately managed, mitigated and minimized.

13.2.3 Failure of a Bidder to comply with this Section may result in the disqualification of the Bidder and the rejection of its Bid.

13.3 CONFIDENTIALITY, DISCLOSURE AND MFIPPA

13.3.1 All information provided by or obtained from the Owner in connection with this Bid Process, the Work, and/or the Contract, including all Reports, is and shall remain the property of the Owner and must be treated as confidential, and such confidentiality obligations shall survive the Bid Process. Such information is not to be used for any purpose other than responding to this Bid Process and, upon conclusion of this Bid Process, if requested by the Owner, Bidders shall return all such information.

13.3.2 Bidders acknowledge that the contents of their Bids will be disclosed within the Owner's organization and/or to the Owner's consultants and advisors. The Owner will use reasonable efforts to protect sensitive and confidential information provided by the Bidders, however, the Owner shall not be liable in any way whatsoever if such information, or any part of it, is disclosed, even if the Owner, its consultants, advisors, staff or any other person associated with them may have been negligent with respect to such disclosure. By submitting a Bid each Bidder agrees to such disclosure and releases the Bid Coordinator and the Owner from any liability for the same.

13.3.3 The Owner may be required to disclose parts or all of a Bid pursuant to the provisions of MFIPPA or other legislation. Subject to the provisions of such legislation, the Owner will use reasonable efforts to safeguard the confidentiality of any information identified by a Bidder as confidential, however, the Owner shall not be liable in any way whatsoever if such information is disclosed based on an order or decision made under such legislation or any other applicable law. By submitting a Bid each Bidder agrees to such disclosure and releases the Bid Coordinator and the Owner from any liability for the same.

13.4 DEBRIEFING

13.4.1 Following the conclusion of this Bid Process, and provided the Contract has been signed, the Owner will offer separate debriefings to unsuccessful Bidders, but only if requested in accordance with paragraph 13.4.2. Debriefings will be held in person or by telephone conference call, at the Owner's discretion, and will be scheduled on a date and time and for a duration to be confirmed by the Owner.

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13.4.2 If an unsuccessful Bidder desires a debriefing it shall submit a written e-mail request to the Bid Coordinator within sixty (60) days after the expiry of the Irrevocability Period, failing which no debriefing will be provided.

13.4.3 Evaluations and scoring of Bids are confidential and during a debriefing the Owner will not provide critiques or discuss the scores or the merits of any Bid other than the Bid submitted by the Bidder that requested the debriefing.

13.5 PUBLIC STATEMENTS

13.5.1 Bidders shall not publish, issue, advertise, distribute or make any statements, postings, blogs or releases, electronic or otherwise, concerning their or any other Bid, the Bid Process, the Contract, the evaluation of Bids, or the award of the Contract, without the Owner's prior express written consent. A Bidder's failure to comply with this paragraph may result in the disqualification of the Bidder and the rejection of its Bid.

13.6 AWARD DOES NOT CONSTITUTE ENDORSEMENT

13.6.1 The Owner's award of the Contract, if any, does not constitute a general endorsement of the successful Bidder's work or services.

13.7 LIMIT OF LIABILITY

13.7.1 Each Bidder agrees that the liability of the Owner to any Bidder and the aggregate amount of damages recoverable against the Owner for any and all claims relating to or arising from this Bid Process including:

- (a) claims arising from negligence, wilful misconduct or other conduct; and/or
- (b) claims arising from a breach of the Bid Contract or any other contractual or other relationship or obligation that may arise as a result of a Bidder's participation in this Bid Process and/or submission of a Bid,

shall be limited to the Bidder's reasonable demonstrated costs of preparing its Bid.

13.8 DISPUTES

13.8.1 If a dispute arises in connection with this Bid Process including, without limitation, a dispute concerning the existence of the Bid Contract or a breach of the Bid Contract, or a dispute as to whether a Bid meets the Mandatory Requirements, the parties to the dispute agree:

- (a) to use their best efforts to resolve the dispute through amicable and good faith negotiations for a period of at least fifteen (15) days, having such written and oral communications and meetings as appropriate;
- (b) if the dispute is not resolved through negotiations the Owner, in its unqualified subjective discretion, may refer the dispute to confidential final binding arbitration before a single arbitrator, selected by the Owner, to be held at Barrie, Ontario pursuant to the *Arbitration Act, 1991* (Ontario), as amended. If the Owner refers the dispute to arbitration, each Bidder agrees that it is bound to arbitrate such dispute. Unless the Owner refers such dispute to arbitration, there shall be no arbitration of such dispute.

13.8.2 The Owner may give notice of a dispute to one or more Bidders, each of whom shall be a party to and shall be entitled to participate in the negotiation and/or arbitration, as the case may be and, in

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the case of arbitration, each of whom shall be bound by the arbitrator's award, whether or not they participated in the arbitration.

13.8.3 If the Owner refers a dispute to arbitration, the parties to the arbitration shall exchange brief statements of their respective positions on the dispute, together with the relevant documents, and submit to an arbitration hearing which shall last no longer than two (2) days, subject to the discretion of the arbitrator to increase such time. The parties to the arbitration further agree that the arbitrator's award shall be final and binding and shall not be subject to appeal. The costs of the arbitrator and the venue shall be shared equally among the parties to the arbitration.

END OF DOCUMENT

SUPPLEMENTARY CONDITIONS

AMENDMENTS TO CCDC 2 – 2008

STIPULATED PRICE CONTRACT

These Supplementary Conditions modify, delete and/or add to the Agreement between Owner and Contractor, the Definitions and the General Conditions of the Stipulated Price Contract, Standard Construction Document CCDC 2 – 2008.

Where any article or paragraph in the CCDC 2 – 2008 document is supplemented by one of the following, the provisions of such article or paragraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article or paragraph in the CCDC 2 – 2008 document is amended, deleted, or superseded by any of the following, the provisions of such article or paragraph not so amended, deleted or superseded shall remain in effect.

The CCDC 2 – 2008 document is amended as follows:

SC1. AGREEMENT BETWEEN OWNER AND CONTRACTOR

SC1.1 ARTICLE A-5 PAYMENT

- 1.1.1 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”.
- 1.1.2 Amend paragraph 5.3.1 as follows:
- (a) Delete “2%” and replace it with “0%” in paragraph 5.3.1(1); and
 - (b) Delete “4%” and replace it with “2%” in paragraph 5.3.1(2).

SC1.2 ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

- 1.2.1 Amend paragraph 6.1 by deleting the words “or other form of electronic communication” in the second and seventh lines.

SC1.3 ARTICLE A-9 TIME IS OF THE ESSENCE

- 1.3.1 Add a new Article A-9 as follows:

“ARTICLE A-9 TIME IS OF THE ESSENCE

- 9.1 The Contractor represents and warrants that it will attain Substantial Performance of the Work by the date stipulated in paragraph 1.3 of Article A-1 – THE WORK and acknowledges that it has been advised by the Owner that it is critical to the Owner that Substantial Performance of the Work is attained by such date. The Contractor agrees that time shall be of the essence in the performance of the Contractor’s obligations under this Contract.”

SC2. DEFINITIONS

SC2.1 Definitions

- 2.1.1 Amend Definition 4, “Consultant”, by adding the following to the end of that definition:
- “For purposes of this Contract, the terms “Consultant”, “Architect” and “Engineer”, wherever used in the Contract Documents, shall be considered synonymous
- 2.1.2 Amend Definition 6, “Contract Documents”, by adding the words “in writing” after the word “upon” in the second line.
- 2.1.3 Amend Definition 12, “Owner”, by adding the following to the end of that Definition:
- “For purposes of the Contract, the terms “Owner”, “SCDSB” and the “Board” shall be considered synonymous.”

SUPPLEMENTARY CONDITIONS

AMENDMENTS TO CCDC 2 – 2008

STIPULATED PRICE CONTRACT

2.1.4 Amend Definition 16, “Provide”, by adding the following to the end of that Definition:

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

2.1.5 Add the following new Definitions:

27. As-Built Drawings

As-Built Drawings means drawings prepared by the Contractor by marking on a copy of the Drawings the changes from the Drawings which occur during construction including, but not limited to, the exact location of major building components and structures that were shown generally on the Drawings. For certainty, As-Built Drawings shall be in computer-aided design (CAD) format, as well as in hard copy and pdf formats.

28. Construction Schedule

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

29. Environmental Programs

Environmental Programs means the environmental plans, programs, procedures and requirements of the Owner. The Environmental Programs include Owner’s asbestos control program, its mould program and a program for controlling and handling designated substances.

30. Install

Install means install and connect. 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, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractor’s association of which the Contractor is a member or to which the Contractor is otherwise bound), job action, slow down, 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. OHSA

OHSA means the Occupational Health and Safety Act (Ontario), as amended, and all rules and regulations made thereunder.

33. WSIB

WSIB means the Ontario Workplace Safety & Insurance Board.”

SC3. GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

SC3.1 GC 1.1 CONTRACT DOCUMENTS

3.1.1 Amend paragraph 1.1.1 by adding the following to the end of that paragraph:

“If the Contractor finds discrepancies in, or omissions from, or has any doubt about the meaning or intent of any of the Contract Documents, the Contractor shall at once notify the Consultant.”

3.1.2 Amend paragraph 1.1.3 by adding the following to the end of that paragraph:

“The intent of the Contract Documents is to include all labour, Products, materials, Construction Equipment and services necessary or normally considered necessary for the performance of the Work in accordance with the Contract Documents. Any item of Work mentioned in the Contract Documents or reasonably inferable from the Contract Documents but not otherwise shown or described shall be provided by the Contractor as if shown or otherwise described or inferable. Any items omitted from the Contract Documents which are reasonably necessary or inferable for the completion of the Work, or

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related work, shall be considered a portion of the Work and included in the scope of Work to be performed under this Contract.”

3.1.3 Amend paragraph 1.1.6 by adding new paragraphs 1.1.6.1 and 1.1.6.2:

“1.1.6.1 The Specifications shall be read as a whole and are the minimum construction requirements. Neither the organization nor the division of the Specifications nor anything else contained in the Contract Documents will be construed to place responsibility on the Consultant to settle disputes among the Subcontractors and Suppliers in respect to such organization or division.

1.1.6.2 The Drawings are, in part, diagrammatic and are intended to convey the scope of the Work and indicate elevations and general and approximate locations, arrangement and sizes of fixtures, equipment, outlets, utilities and underground services. The Contractor shall obtain more accurate information and shall satisfy itself as to the conditions of the pre-grade elevations and the locations, arrangement and sizes of fixtures, equipment, outlets, utilities and underground services from study and coordination of the Drawings, including Shop Drawings, and shall satisfy itself and become familiar with conditions and spaces affecting these matters before proceeding with the Work. Where site conditions require reasonable minor changes in indicated locations and arrangements, 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.”

3.1.4 Amend paragraph 1.1.7 by adding the following at the end of the paragraph:

“Notwithstanding the foregoing, if there is a conflict or discrepancy between Drawings or between Drawings and Specification or any other Contract Documents in relation to the Products to be supplied or the amount of labour or materials required to complete a particular item of Work, the Contractor shall supply and shall include in the Work the Products, labour and materials which would provide the greatest benefit to the Owner, as determined by the Owner.”

3.1.5 Delete paragraph 1.1.8 and replace it with the following:

“1.1.8 The Owner shall provide the Contractor, without charge, 6 copies of the Contract Documents. Additional copies of the Contract Documents may be obtained from the Consultant at a reasonable cost.”

SC3.2 GC 1.3 RIGHTS AND REMEDIES

3.2.1 Add a new paragraph 1.3.3 as follows:

“1.3.3 To be effective, a waiver of a right, remedy, duty or obligation under this Contract must be expressly written by an authorized representative of the party. For greater certainty, actions of the Owner which shall not constitute a waiver include, but are not limited to, the following:

- .1 making payments to the Contractor;
- .2 any partial or entire use or occupancy of the Project by the Owner;
- .3 final acceptance of the Work by the Owner;
- .4 failure of the Owner or its representatives to object to known defects;
- .5 specifying a list of defects will not be held a waiver of defects not listed.”

SC3.3 GC 2.2 ROLE OF THE CONSULTANT

3.3.1 Amend paragraph 2.2.7 by deleting the words “Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER” from the beginning of the paragraph.

3.3.2 Amend paragraph 2.2.13 by adding the following to the end of that paragraph:

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"If, in the opinion of the Contractor, a Supplemental Instruction involves an adjustment in the Contract Price or the Contract Time, the Contractor shall, within five (5) Working Days of receipt of the Supplemental Instruction, provide the Consultant with a written notice to that effect and shall await further instructions. The Contractor's failure to provide such written notification within the time stipulated in this paragraph shall be deemed an acceptance of the Supplemental Instruction by the Contractor without adjustment in the Contract Price or Contract Time. Without limiting the generality of the foregoing, every item on the Drawings shall be deemed to be included within the scope of the Work, unless noted 'not in contract'."

3.3.1 Add a new paragraph 2.2.19 as follows:

"2.2.19 Neither the Contractor nor any Subcontractor or Supplier shall have any claim against the Consultant as a result of the performance or non-performance of the Consultant's services. The Contractor shall include this provision in any contracts it makes with its Subcontractors and Suppliers, and shall require such Subcontractors and Suppliers to include the same term in their contracts with their subcontractors and suppliers."

SC3.4 GC 2.3 REVIEW AND INSPECTION OF THE WORK

3.4.1 Amend paragraph 2.3.5 by adding the following to the end of the second sentence:

" , and there shall be no extensions of the Contract Time resulting from any delay caused by such examination and correction."

SC3.5 GC 2.4 DEFECTIVE WORK

3.5.1 Add new paragraphs 2.4.1.1 and 2.4.1.2 as follows:

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

2.4.1.2 The Contractor shall prioritize the correction of any defective Work which, in the sole discretion of the Owner, adversely affects the day to day operations of the Owner."

SC3.6 GC 3.0 PRE-CONSTRUCTION SUBMITTALS

3.6.1 Add a new GC 3.0 as follows:

"GC 3.0 PRE-CONSTRUCTION SUBMITTALS

3.0.1 Prior to site mobilization, the Contractor shall submit to the Owner:

- .1 a current WSIB clearance certificate;
- .2 certified true copies of the Contractor's insurance policies having application to the Project or certificates of insurance, at the option of the Owner;
- .3 the bonds described in GC 11.2 – CONTRACT SECURITY;
- .4 documentation of the Contractor's in-house safety program to be implemented for the Project;
- .5 a copy of the Notice of Project filed with the appropriate Ministry naming the Contractor as "constructor" under the OHSA; and
- .6 the Construction Schedule referred to in paragraph 3.5.1.1 of GC 3.5 – CONSTRUCTION SCHEDULE."

SC3.7 GC 3.1 CONTROL OF THE WORK

3.7.1 Add new paragraphs 3.1.3 to 3.1.6 as follows:

"3.1.3 Notwithstanding paragraphs 3.1.1 and 3.1.2, the Contractor agrees that it shall fully incorporate and comply with all policies and procedures of the Owner which are relevant to any activity to be performed under the Contract. The Contractor shall inquire from the Owner

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if such policies or procedures exist and the Owner agrees that it will use reasonable efforts to communicate to the Contractor all relevant policies or procedures.

- 3.1.4 Prior to commencing fabrication and construction activities, the Contractor shall verify 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 shall obtain written instructions from the Consultant before proceeding with any part of the affected Work.
- 3.1.5 The Contractor shall be entirely responsible for the proper laying out of the whole of the Work. The Contractor shall employ an experienced and licensed land surveyor to establish and check grades, benchmarks, references, elevations, points and lines as from time to time may be required for the purposes of the Work, or layout of same, and the Contractor shall at every appropriate stage of the Work take all proper steps to have all proper checks and surveys made so as to ensure that the Work and all components thereof will be wholly within the boundaries of the Project site and in the exact position (or respective positions) established for such Work, and shall assume full responsibility for the correctness of all such lines, levels and measurements.
- 3.1.6 The Contractor shall perform the Work in accordance with modern practice and shall employ only good workmanship in accordance with the Contract Documents, applicable laws, ordinances, rules, regulations, or codes relating to the performance of the Work. Without limiting the generality of the foregoing, the Contractor is responsible for the coordination of the various parts of the Work so that no part shall be left in an unfinished or incomplete condition owing to any disagreement between Subcontractors, or between any of the Subcontractors and the Contractor as to where the Work of one begins or ends with relation to the Work of the other.”

SC3.8 GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

- 3.8.1 Delete paragraphs 3.2.2.1 and 3.2.2.2.
- 3.8.2 Amend paragraph 3.2.3.2 by deleting the semi-colon towards the end of that paragraph and adding the following after the words “schedules and”:
- “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;”
- 3.8.3 Amend paragraph 3.2.3.3 by adding the following to the end of that paragraph:
- “Failure by the Contractor to so report shall invalidate any claims against the Owner by reason of the deficiencies in the work of other contractors or Owner’s own forces except those deficiencies not then reasonably discoverable.”
- 3.8.4 Add a new paragraph 3.2.3.4 as follows:
- “3.2.3.4 assume overall responsibility for compliance with all aspects of the applicable health and construction safety legislation at the Place of the Work, including all the responsibilities of the “constructor” under the OHSA.”
- 3.8.5 Add a new paragraph 3.2.7 as follows:
- “3.2.7 If the Contractor is of the view that the work of other contractors or the work of the Owner’s own forces will compromise, void or nullify any of the warranties to be provided pursuant to this Contract, the Contractor shall give Notice in Writing to the Owner as soon as reasonably possible and shall include in such notice the reasons why, in the Contractor’s view, a warranty or warranties will be compromised, voided or nullified, together with the Contractor’s recommendations for avoiding such result.”

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SC3.9 GC 3.4 DOCUMENT REVIEW

3.9.1 Amend paragraph 3.4.1 by deleting the second and third sentences of that paragraph and replacing them with the following:

“Such review by the Contractor shall meet the standard of care described in GC 3.14 – STANDARD OF CARE. Except for the obligation to make such review and report the result, the Contractor does not assume any responsibility to the Owner or the Consultant for the accuracy of the Contract Documents. Provided it has exercised the degree of care and skill described in this paragraph, the Contractor shall not be liable for damages or costs resulting from such errors, inconsistencies, or omissions in the Contract Documents, which the Contractor did not discover.”

3.9.2 Add new paragraphs 3.4.2 and 3.4.3 as follows:

“3.4.2 Notwithstanding the foregoing, errors, inconsistencies, discrepancies and/or omissions shall not include lack of reference on the Drawings or in the Specifications to labour and/or Products that are required or normally recognized within respective trade practices as being necessary for the complete execution of the Work.

3.4.3 If the Contractor finds discrepancies in and/or omissions from the Contract Documents or has any doubt as to the meaning or intent of any part thereof, the Contractor must immediately notify the Consultant, who will provide written instructions or explanations. Neither the Owner nor the Consultant will be responsible for oral instructions.”

SC3.10 GC 3.5 CONSTRUCTION SCHEDULE

3.10.1 Delete paragraph 3.5.1 and replace it with the following:

“3.5.1 The Contractor shall:

- .1 within ten (10) Working Days of signing this Contract submit to the Owner, for the Owner’s approval, a Construction Schedule that indicates the timing of major activities and critical milestone dates for the Project, demonstrating that the Work will be performed in conformity with the Contract Time. Such schedule:
 - (A) shall be in editable electronic format approved by the Owner and shall include and show all logic links between activities; and
 - (B) shall be prepared in collaboration with, and supported by, the Subcontractors and Suppliers whose activities affect the critical path of the Work, and
 - (C) shall include and make provision for statutory holidays, the rectification of defects and deficiencies, and all warranty obligations, and
 - (D) shall provide sufficient detail of the critical events and their inter-relationship and shall include a baseline schedule indicating the critical path for the Project; and
- .2 provide the expertise and resources, including manpower and Construction Equipment, as are necessary to maintain progress under the Construction Schedule or any successor or revised schedule approved by the Owner; and
- .3 monitor the progress of the Work relative to the Construction Schedule or any successor or revised schedule approved by the Owner and update the Construction Schedule on a monthly basis or at such other interval as instructed by the Owner and/or the Consultant; and
- .4 advise the Consultant and the Owner in writing of any variation from the baseline or slippage in the Construction Schedule within 24 hours of such variation or slippage becoming apparent; and
- .5 at each site meeting, provide (in writing or verbally to be recorded in minutes) to the Owner and the Consultant a look-ahead schedule indicating the major activities to be undertaken or constructed in the next month.”

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3.10.2 Add new paragraphs 3.5.2, 3.5.3 and 3.5.4 as follows:

- “3.5.2 If at any time it should appear to the Owner or the Consultant that the actual progress of the Work is behind the Construction Schedule or any other schedule or is likely to fall behind schedule, based on critical path methodology, or if the Contractor has so advised the Consultant pursuant to paragraph 3.5.1.3, the Contractor shall take appropriate steps to cause the actual progress of the Work to conform to the Construction Schedule and shall produce and present to the Owner and the Consultant a recovery plan demonstrating how the Contractor will achieve the recovery of the Construction Schedule. If the Contractor intends to apply for a change in the Contract Price in relation to a schedule recovery plan, the Contractor shall proceed pursuant to GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.
- 3.5.3 If after applying the expertise and resources required under paragraphs 3.5.1 and 3.5.2 the Contractor forms the opinion that the slippage in the Construction Schedule or any other schedule cannot be recovered by the Contractor, it shall give Notice in Writing to the Consultant and the Owner if the Contractor intends to apply for an extension of Contract Time.
- 3.5.4 Without limiting the other obligations of the Contractor under GC 3.5, the Contractor shall not amend the Construction Schedule without the prior written consent of the Owner. In addition, at each site construction meeting, the Contractor shall provide to the Owner and the Consultant a two (2) week look-ahead schedule indicating the major activities to be undertaken or constructed in such two (2) week period.”

SC3.11 GC 3.6 SUPERVISION

3.11.1 Amend paragraph 3.6.1 by adding the following to the end of that paragraph:

“, and upon the Contractor obtaining the Owner’s prior written consent, which consent will not be unreasonably withheld.”

3.11.2 Add a new paragraph 3.6.3 as follows:

“3.6.3 The Owner, acting reasonably, shall have the right to order the Contractor to remove from the Project any representative or employee of the Contractor, Subcontractors or Suppliers who, in the opinion of the Owner, are a detriment to the Project.”

SC3.12 GC 3.7 SUBCONTRACTORS AND SUPPLIERS

3.12.1 Add new paragraph 3.7.1.4 as follows:

“3.7.1.4 ensure that all Subcontractors and Suppliers, and anyone employed or engaged by them directly or indirectly, have the qualifications, technical skills, levels of experience and knowledge required (including with respect to all applicable health and construction safety rules and regulations), and all applicable permits, licenses and approvals necessary, to discharge the work to be performed by them in accordance with the terms of the Contract.”

3.12.2 Amend paragraph 3.7.2 by adding the following to the end of that paragraph:

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

3.12.3 Amend paragraph 3.7.3 by deleting the words “before the Owner has signed the Contract” in the first line of that paragraph.

3.12.4 Add a new paragraph 3.7.7 as follows:

“3.7.7 Notwithstanding paragraph 3.7.5, the Owner may assign to the Contractor, and the Contractor agrees to accept, the assignment of any contract procured by the Owner for Work or services or Products required on the Project that has been pre-tendered or pre-negotiated by the Owner.”

SC3.13 GC 3.8 LABOUR AND PRODUCTS

3.13.1 Amend paragraph 3.8.1 by adding the following sentence to the end of that paragraph:

“The Contractor represents and warrants that the Products provided in accordance with the Contract Documents are not subject to any conditional sales contracts and are not subject to any security rights claimed or obtained by any third party which may subject any of the Products to seizure and/or removal from the Place of the Work.”

3.13.2 Delete paragraph 3.8.2 and replace it with the following:

“3.8.2 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, Ontario Building Code and all governmental authorities 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, and such Products shall be brought to the Place of the Work at the sole risk of the Contractor”

3.13.3 Amend paragraph 3.8.3 by adding the words “, agents, Subcontractors and Suppliers” after the word “employees” toward the end of the first line.

3.13.4 Add new paragraphs 3.8.4 to 3.8.7 as follows:

“3.8.4 The Contractor is responsible for the safe on-site storage of Products and their protection (including Products supplied by the Owner and other contractors to be installed under the Contract) in such ways as to avoid dangerous conditions or contamination to the Products or other persons or property and in locations at the Place of the Work to the satisfaction of the Owner and the Consultant.

3.8.5 The Contractor shall cooperate with the Owner and shall take all reasonable and necessary actions to maintain stable and harmonious labour relations with respect to the Work, including cooperation to attempt to avoid work stoppages, trade union jurisdictional disputes, and other Labour Disputes. The Contractor shall not, and shall ensure that its Subcontractors and Suppliers do not, employ any persons on the Project whose labour affiliation, or lack thereof, is incompatible with other labour employed in connection with the Work. Any costs arising from Labour Disputes as a result of the employment of any such person by the Contractor, its Subcontractors or Suppliers, shall be the sole expense of the Contractor.

3.8.6 Without in any way limiting the Contractor’s obligations under this Contract, the Contractor shall prepare and implement job site rules more particularly described in the Contract Documents. If no job site rules are described in the Contract Documents, the Contractor shall draft job site rules for the review and approval of the Owner. Such job site rules shall be consistent with the Contractor’s duties and obligations under the OHSA, and shall include provisions making smoking and the consumption of alcohol or non-prescription drugs on the Project the subject of discipline proceedings and/or termination of employment.

3.8.7 The Owner, acting reasonably, shall have the right to order the Contractor to remove from the Project, without cost to the Owner, any representative or employee of the Contractor or any representative or employee of any Subcontractor or Supplier who, in the opinion of the Owner, is a detriment to the Project. In addition, where the Work is being carried out at or near an existing school during the school year, the Contractor shall, upon the Owner’s request, provide to the Owner criminal background checks on all of the Contractor’s employees who will be providing work or services at the Place of the Work, and the Contractor shall require its Subcontractors and Suppliers to provide criminal background checks on any of their employees who will be providing work or services at the Place of the Work. Where such background checks indicate that an employee of the Contractor or any Subcontractor or Supplier has a criminal record, the Owner shall be entitled to cause the removal of that person from the Project.”

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SC3.14 GC 3.9 DOCUMENTS AT THE SITE

3.14.1 Delete paragraph 3.9.1 and replace it with the following:

"3.9.1 The Contractor shall keep one copy of the current Contract Documents, As-Built Drawings, Supplemental Instructions, contemplated change orders, Change Orders, Change Directives, cash allowance disbursement authorizations, reviewed Shop Drawings, Submittals, reports and records of meetings at the Place of the Work, in good order and available to the Owner and Consultant."

SC3.15 GC 3.10 SHOP DRAWINGS

3.15.1 Delete paragraph 3.10.3 in its entirety and replace it with the following:

"3.10.3 The Contractor shall prepare a Shop Drawing schedule acceptable to the Owner and the Consultant prior to the first application for payment. A draft of the proposed Shop Drawing schedule shall be submitted by the Contractor to the Consultant and the Owner for approval. The draft Shop Drawing schedule shall clearly indicate the phasing of Shop Drawing submissions."

3.15.2 Add new paragraphs 3.10.13 to 3.10.16 as follows:

"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 not use the term "by others" on Shop Drawings or other submittals, but shall identify the responsible trade, Subcontractor or Supplier where such work is within the scope of the Work.

3.10.15 Where Specifications require the Shop Drawings to bear the seal and signature of a professional engineer, such professional engineer shall 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.

3.10.16 The Owner's approval of Shop Drawings will be an approval of general detail and arrangement only. The Owner's approval shall not relieve the Contractor from its responsibility for deviations from the Contract Documents, unless the Contractor in writing has notified the Owner of such deviations at the time of submission of the Shop Drawings and the Owner has given written approval to the specific deviations. The Owner's approval also shall not relieve the Contractor from responsibility for defective Work resulting from errors or omissions of any kind on the approved Shop Drawings and shall not constitute authorization to the Contractor to perform additional Work or changed Work. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes, or techniques of construction and installation."

SC3.16 GC 3.11 USE OF THE WORK

3.16.1 Add new paragraphs 3.11.3 and 3.11.4:

"3.11.3 The Owner or its contractors shall have the right to enter or occupy the Place of the Work, in whole or part, and whether partially or entirely completed, for the purpose of installing, testing or storing fixtures, equipment or machinery before the issuance of a final certificate for payment if such entry and occupancy does not materially interfere with the Contractor in the performance and completion of this Contract within the Contract Time. Such entry or occupancy shall not be considered as acceptance of the Work, in whole or in part, nor shall it relieve the Contractor of its responsibility to complete the Contract.

3.11.4 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 Substantial Performance of the Work may not have been attained, provided that such taking of 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

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acknowledgement or acceptance of the Work or the Project, nor shall it relieve the Contractor of any of its obligations under the Contract. In particular, the Contractor's obligations respecting construction health and safety, including all duties of the "constructor" under the OHSA, shall continue to apply notwithstanding such taking of possession and use."

SC3.17 GC 3.13 CLEANUP

3.17.1 Amend paragraph 3.13.1 by adding the following to the end of that paragraph:

"The Contractor shall ensure the Place of the Work is cleaned and left in a tidy condition on a daily basis. In the event that the Contractor fails to remove waste and debris as provided in this GC 3.13, then, the Owner or the Consultant may give the Contractor twenty-four (24) hours' written notice to meet its obligations respecting clean up. Should the Contractor fail to meet its obligations pursuant to this GC 3.13 within the twenty-four (24) hour period next following delivery of the notice, the Owner may remove such waste and debris and deduct from payments otherwise due to the Contractor the Owner's costs for such clean up, including a reasonable mark-up for administration."

SC3.18 GC 3.14 STANDARD OF CARE

3.18.1 Add new GC 3.14 as follows:

"GC 3.14 STANDARD OF CARE

- 3.14.1 In performing this Contract the Contractor shall exercise a standard of care, skill and diligence that would normally be exercised by an experienced and prudent contractor supplying similar services for similar projects. The Contractor acknowledges and agrees that throughout the Contract, the Contractor's obligations, duties and responsibilities shall be interpreted in accordance with this standard. The Contractor shall exercise the same standard of care, skill and diligence in respect of any Products, Subcontractors, Suppliers, personnel, or procedures which it may recommend to the Owner or employ on the Project.
- 3.14.2 The Contractor 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 its designated supervisor and project manager, 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 that would have a material effect on the financial ability of the Contractor to perform this Contract.
- 3.14.3 The Contractor shall perform the Work so as to avoid disturbing the occupants of the Place of the Work and any adjacent structures or the public in general, and shall perform the Work in the least intrusive manner possible and shall respect and comply with local regulations and requirements regarding permitted work hours, noise levels and work conditions. The Contractor, without in any way limiting its responsibilities under this 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, to avoid conditions likely to propagate mould or fungus of any kind, and shall take all other steps reasonably necessary to promote and maintain the safety and comfort of the occupants of the Place of the Work and any adjacent structures and the public in general, and/or to maintain access to and the operation of the same. Without Owner's prior approval, the Contractor shall not permit any personnel, workers or Subcontractors to use any existing facilities including, without limitation, elevators, lavatories, toilets, entrances and parking areas other than those designated by the Owner."

SC3.19 GC 3.15 CONTRACTOR'S USE OF PERMANENT EQUIPMENT OR SYSTEMS

3.19.1 Add a new GC 3.15 as follows:

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“GC 3.15 CONTRACTOR’S USE OF PERMANENT EQUIPMENT OR SYSTEMS

- 3.15.1 Upon receiving the Contractor’s written request the Owner may, but is under no obligation to, permit the Contractor to make use of elements of the mechanical and electrical systems or equipment comprising a permanent part of the Work for the purpose of completing the Project. In such event the Contractor shall:
- .1 perform all preventative maintenance services on such systems and equipment as and when specified by the manufacturer;
 - .2 prior to applying for the certificate of Substantial Performance of the Work, clean and make good, to the satisfaction of the Consultant, all such systems and equipment;
 - .3 pay any and all costs associated with such use, preventative maintenance services, cleaning and making good.
- 3.15.2 Where the Contractor has made use of elements of the mechanical and electrical systems or equipment comprising a permanent part of the Work, as described in paragraph 3.15.1, the Contractor shall obtain, from the manufacturer or Supplier of the systems or equipment used, a confirmation from such manufacturer or Supplier that the warranty on such systems or equipment begins on the date of Substantial Performance of the Work and is not impaired in scope or reduced in time by virtue of the Contractor’s use of such systems or equipment.”

SC3.20 GC 4.1 CASH ALLOWANCES

3.20.1 Delete paragraphs 4.1.4 and 4.1.5 and replace them with the following:

- “4.1.4 Where the actual cost of the Work under any cash allowance exceeds or is expected to exceed the amount of the allowance, the Contractor shall notify the Owner in writing indicating the amount of additional funds required and, in such case, the Contractor shall not proceed with the cash allowance work until the Contractor receives written instructions from the Owner. Unexpended amounts from other cash allowances may be reallocated at the Consultant’s direction to cover the shortfall and, in that case, the Contractor is not entitled to any amount for overhead and profit. Where no such direction is given, or where the actual cost exceeds the allowance even after reallocation of unexpended amounts from other cash allowances, the Contractor shall be compensated for the excess incurred and substantiated, plus an amount for overhead and profit as set out in the Contract Documents, but on the excess only.
- 4.1.5 The net amount of any unexpended cash allowances, after providing for any reallocations as contemplated in paragraph 4.1.4, shall be deducted from the Contract Price by Change Order without any adjustment for the Contractor’s overhead and profit on such amount.”

3.20.2 Add new paragraphs 4.1.8 and 4.1.9 as follows:

- “4.1.8 Purchases from cash allowances must be authorized by written instructions issued by the Consultant and the form and methods of accounting for costs shall be agreed to by the Consultant and the Contractor before proceeding with the purchase.
- 4.1.9 The Owner reserves the right to call, or to have the Contractor call, for competitive bids for portions of the Work to be paid for from cash allowances.”

SC3.21 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

3.21.1 Delete GC 5.1.

SC3.22 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

3.22.1 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.”

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3.22.2 Amend paragraph 5.2.7 by adding the following to the end of that paragraph:

“Any Products delivered to the Place of the Work but not yet incorporated into the Work shall remain at the risk of the Contractor notwithstanding that title has passed to the Owner pursuant to GC 13.1 – OWNERSHIP OF MATERIALS.”

3.22.3 Add new paragraphs 5.2.8 and 5.2.9 as follows:

“5.2.8 As a condition of receiving each progress payment the Contractor shall include with each application for payment:

- .1 a CCDC 9 Statutory Declaration attesting to the truth of the statements made therein;
- .2 a current WSIB clearance certificate; and
- .3 in respect of any subcontract whose value exceeds \$100,000, a statutory declaration in form CCDC 9B – 2001.”

SC3.23 GC 5.3 PROGRESS PAYMENT

3.23.1 Amend paragraph 5.3.1.2 by deleting the words “calendar days” in the first line and replacing them with “Working Days”.

3.23.2 Delete paragraph 5.3.1.3 and replace it with the following:

“5.3.1.3 the Owner shall make payment to the Contractor on account as provided in Article A-5 of the Agreement – PAYMENT no later than 15 Working Days after the Owner’s receipt of a certificate of payment issued by the Consultant.”

3.23.3 Add new paragraphs 5.3.2 and 5.3.3 as follows:

“5.3.2 If the Contractor fails to provide the necessary supporting documentation with each application for progress payment in accordance with GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT, the Owner reserves the right to withhold payment to the Contractor until such time as the supporting documentation is provided.

5.3.3 Payment by the Owner shall not preclude the Owner from thereafter disputing any of the items for which payment was made and shall not be construed as acceptance of any part of the Work.”

SC3.24 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

3.24.1 Delete paragraph 5.4.3 and replace it with the following:

“5.4.3 Immediately after the issuance of the certificate of Substantial Performance of the Work, the Contractor, in consultation with the Consultant, shall establish reasonable dates for finishing the Work and correcting deficiencies.

5.4.4 Before submitting the written application referred to in paragraph 5.4.1, the Contractor shall submit to the Consultant all:

- .1 guarantees, warranties and certificates;
- .2 testing and balancing reports and spare parts;
- .3 distribution system diagrams and Shop Drawings;
- .4 maintenance and operational manuals, instructions and materials;
- .5 existing reports and correspondence from authorities having jurisdiction,

and other close-out 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 performed in conformance with the requirements of municipal, governmental, and utility authorities having jurisdiction at the Place of the Work. The Contractor shall deliver the materials and documentation listed in this paragraph in an electronic format that is readable on the Owner’s information technology infrastructure.

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- 5.4.5 Within thirty (30) days of the date of Substantial Performance of the Work the Contractor shall deliver to the consultant final As-Built Drawings, failing which the Consultant may assign a reasonable amount to cover the cost the Owner would incur to prepare the As-Built Drawings or, where applicable, an amount specified in the Contract Documents, and retain that amount from any future amount owing to the Contractor, until the final As-Built Drawings are delivered.
- 5.4.6 If the Contractor fails to deliver the documents and materials described in paragraph 5.4.4, then, provided that none of the missing documents and materials interferes with the use and occupancy of the Project in a material way, the failure to deliver shall not be grounds for the Consultant to refuse to certify Substantial Performance of the Work. The Consultant may assign a reasonable amount or, where applicable, an amount specified in the Contract Documents, and retain that amount from the written application for Substantial Performance of the Work, until the required materials are delivered.
- 5.4.7 Should any documents or materials not be delivered in accordance with paragraph 5.4.4 or 5.4.5 by the earlier of: (1) forty-five (45) days following the issuance of the certificate of Substantial Performance of the Work, and (2) the Contractor's application for final payment under paragraph 5.7.1 of GC 5.7 – FINAL PAYMENT, then the amount(s) previously retained pursuant to paragraphs 5.4.5 and/or 5.4.6 shall be forfeited to the Owner as compensation for the damages deemed to have been incurred by the Owner, and not as a penalty, arising from the Contractor's failure to deliver the specified documents or materials, and the Contract Price shall be reduced accordingly."

SC3.25 GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- 3.25.1 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, the amount of such reserve fund to be based on the Consultant's reasonable estimate of the cost of correcting deficient items."
- 3.25.2 Delete paragraph 5.5.3.
- 3.25.3 Amend paragraph 5.5.4 by deleting the word "first" in the second line of that paragraph and replacing it with the word "fifth".

SC3.26 GC 5.7 FINAL PAYMENT

- 3.26.1 Amend paragraph 5.7.1 by adding the following to the end of that paragraph:
"The Contractor's application for final payment shall be accompanied by any documents or materials not yet delivered pursuant to paragraphs 5.4.4 and 5.4.5 of GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK."
- 3.26.2 Amend paragraph 5.7.2 as follows:
- (a) by deleting the words "10 calendar days" in the first line of that paragraph and replacing them with "10 Working Days"; and
 - (b) by adding the following to the end of that paragraph:
"The application will not be considered valid until Products installed are tested and conform to the requirements specified in the Contract Documents and all documentation required by the Contract Documents including but not limited to the documents and materials listed in paragraphs 5.4.4 and 5.4.5 of GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK have been received and accepted by the Consultant."
- 3.26.3 Amend paragraph 5.7.4 by deleting the words "5 calendar days after the issuance" and substituting the words "15 Working Days after receipt" in the second line.

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SC3.27 GC 5.8 WITHHOLDING OF PAYMENT

3.27.1 Add new paragraphs 5.8.2 and 5.8.3 as follows:

- “5.8.2 Notwithstanding any provision in the Contract Documents to the contrary, the Owner may withhold payment on any certificate for payment to the extent required to offset any previous over-payment made to the Contractor, damages or costs incurred by the Owner, or to the extent as may be necessary to protect the Owner from loss or damage as a result of:
- .1 Contractor’s failure to perform any of its material obligations, or where the Contractor is otherwise in default under the Contract Documents and any such default is continuing;
 - .2 defective Work not remedied;
 - .3 damage done by the Contractor to work carried out by other contractors or by Owner’s forces;
 - .4 Contractor’s failure to make prompt payment to its Subcontractors and Suppliers respecting Work for which the Owner has made payment to the Contractor;
 - .5 claims or reasonable evidence indicating possible commencement of claims for which the Contractor may be responsible to indemnify the Owner;
 - .6 there is a reasonable indication that the Work will not be substantially performed in accordance with the Construction Schedule or within the Contract Time;
 - .7 Contractor’s failure to remove liens arising from the Work or otherwise to satisfy its obligations under GC 13.4 – LIENS AND ACTIONS.
- 5.8.3 Where the Owner has withheld payment to the Contractor pursuant to the provisions of this Contract, the Owner shall be entitled to apply the funds withheld toward the cost of any required remedial work, or toward damages or losses suffered and for which the Owner is entitled to compensation under the Contract.”

SC3.28 GC 6.1 OWNER’S RIGHT TO MAKE CHANGES

3.28.1 Amend paragraph 6.1.2 by adding the following to the end of that paragraph:

“This requirement is of the essence and it is the express intention of the parties that any claims by the Contractor for a change in the Contract Price, Contract Time and/or the Contract shall be barred unless there has been strict compliance with PART 6 – CHANGES IN THE WORK. No course of conduct or dealing between the parties, no express or implied acceptance of alterations or additions to the Work, and no claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether in fact there is any such unjust enrichment or not, shall be the basis of a claim for additional payment under this Contract or a claim for any extension of the Contract Time, or a claim for an amendment to the Contract. Without limiting the generality of the foregoing, under circumstances of expediency, the Contractor may proceed with a change in the Work without first obtaining a Change Order or a Change Directive where it has received from the Owner or the Owner’s authorized representative some form of written or electronic direction agreeing to a change in the Contract Price, the Contract Time or the Contract, in which case such change, and the value of such change, if any, will be determined pursuant to GC 6.2 or GC 6.3, at the option of the Owner.”

3.28.2 Add a new paragraph 6.1.3 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 shall not entitle the Contractor to claim any increase to the Contract Price in relation to coordination.”

SC3.29 GC 6.2 CHANGE ORDER

3.29.1 Amend paragraph 6.2.1 by adding the following sentence to the end of that paragraph:

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“Such adjustments and method of adjustment must be submitted by the Contractor to the Consultant in sufficient time to prevent interruption of the orderly process of construction and, in any event, no later than ten (10) days from the Contractor’s receipt of the proposed change in the Work.”

3.29.2 Add new paragraphs 6.2.3 to 6.2.6 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 Owner:

- .1 by estimate and acceptance of a lump sum. The lump sum shall include overhead, profit and other reasonable charges of the Contractor and shall be the total cost to the Owner;
- .2 by unit prices established in the Contract or subsequently agreed upon. Unit prices shall include overhead, profit, and other reasonable charges of the Contractor and shall be the total cost to the Owner. Adjustment to the Contract Price shall be based on a net quantity difference from the original quantity.
- .3 by the amount, net of all credits, of time, materials and Products expended:
 - (A) by a Subcontractor, applying the labour charge out rates set out in the wage schedule in the Contract Documents together with the actual costs, without mark-up, of materials and Products utilized in the change, plus the Subcontractor's mark-up disclosed in Column A of the table below which applies to material and Product costs only;
 - (B) by the Contractor, applying the labour charge out rates set out in the wage schedule in the Contract Documents together with the actual costs, without mark-up, of materials and Products utilized in the change, plus the mark-up disclosed in Column B of the table below which applies to material and Product costs only. For greater certainty, the Contractor is not entitled to a mark-up disclosed in Column B of the table below on self-performed additional work.

The Contractor shall also be entitled to the mark-up disclosed in Column B of the table below, on the value of additional work performed by Subcontractors.

| Value of Additional Work | <u>Column A</u> Subcontractor Mark-Up on Material and Products only | <u>Column B</u> Contractor Mark-Up on Material and Products Supplied by the Contractor, and on Subcontractor work |
|------------------------------|--|--|
| \$0 to no more than \$25,000 | 10% | 10% |
| \$0 to no more than \$50,000 | 10% | 7.5% |
| \$0 to in excess of \$50,000 | 5% | 5% |

Interpretive Note: The mark-ups disclosed in the above table are flat not graduated. For example, a Subcontractor performed change valued at \$35,000 attracts a mark-up of 10% for the Subcontractor (on the cost of material and Products only) and 7.5% for the Contractor. The table is not intended to provide one set of mark-ups for the first \$25,000 of the change and a different set of mark-ups for the balance.

- 6.2.4 The mark-ups described in paragraph 6.2.3.3 are intended to cover all general expenses and overhead costs incurred by the Contractor in relation to the change. For greater certainty, the following items are covered by and included in the mark-ups: additional bonding and insurance costs, supervision, project management, general account items, small tools, estimating, safety, preparation of record drawings, coordination and administration and warranty costs, and general clean-up and disposal costs necessary to perform the change in the Work.
- 6.2.5 An adjustment to the Contract Time will be considered only when the Contractor demonstrates to the Owner that a change in the Work affects the critical path of the Work. Any costs associated with an adjustment to the Contract Time shall be identified by the

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Contractor and shall be limited to the reasonable direct costs directly attributable to the adjustment to the Contract Time, excluding the items described in paragraph 6.2.4.

- 6.2.6 The Contractor shall not be entitled to any additional compensation arising out of changes to the Work aside from the amounts determined in accordance with this GC 6.2. In no event shall the Owner be liable to the Contractor for any costs, including indirect, impact or consequential costs, arising out of changes to the Work beyond the agreed upon amount of the Change Order.”

SC3.30 GC 6.3 CHANGE DIRECTIVE

3.30.1 Delete paragraph 6.3.3.

3.30.2 Amend paragraph 6.3.7 by inserting the words “Subject to paragraph 6.3.14,” at the beginning of that paragraph. Further amend paragraph 6.3.7 as follows:

(a) Delete paragraph 6.3.7.1 and replace it with the following:

“6.3.7.1 salaries, wages and benefits paid to personnel in the direct employ of the Contractor, applying the labour rates set out in the wage schedule in the Contract Documents or as otherwise agreed between the Owner and Contractor for personnel

- (A) carrying out the Work, including necessary supervisory services;
- (B) engaged in the preparation of Shop Drawings, fabrication Drawings, coordination Drawings and As-Built Drawings; or
- (C) including clerical staff engaged in processing changes in the Work.”

(b) Delete paragraphs 6.3.7.15 and 6.3.7.17.

3.30.3 Amend paragraph 6.3.12 by adding the following to the beginning of that paragraph:

“An adjustment of the Contract Time will be considered only where the change in the Work affects the critical path of the Work.”

3.30.4 Add a new paragraph 6.3.14 as follows:

“6.3.14 Without limitation, the following shall not form part of the cost of performing the work attributable to a Change Directive, and shall not be recoverable by the Contractor:

- .1 head office salaries and benefits and all other overhead or general expenses, except only for the salaries, wages and benefits of personnel described in paragraph 6.3.7.1 and the contributions, assessments or taxes referred to in paragraph 6.3.7.2;
- .2 capital expenses and interest on capital;
- .3 general cleanup, except where the performance of the work attributed to the Change Directive causes specific additional cleanup requirements;
- .4 wages paid for field supervision of Subcontractors;
- .5 wages, salaries, rentals or other expenses that exceed the rates that are standard in the locality of the Place of the Work or that are otherwise deemed unreasonable by the Consultant;
- .6 any costs or expenses attributable to the negligence, improper work, deficiencies, or breaches of contract by the Contractor or any Subcontractor;
- .7 any costs of quality assurance, such as inspection and testing services, charges levied by authorities having jurisdiction, and any legal fees unless any such costs or fees are pre-approved in writing by the Owner; and
- .8 the costs of the items listed in paragraph 6.2.4.”

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SC3.31 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

3.31.1 Add a new paragraph 6.4.0 as follows:

“6.4.0 The Contractor confirms that, before signing the Contract, it carefully investigated and examined the Place of the Work, the Contract Documents and any other documents made available by the Owner, and applied to such investigations and examinations the degree of care, skill and diligence described in paragraph 3.14.1 of GC 3.14 – STANDARD OF CARE. Through such investigations and examinations, the Contractor has satisfied itself as to the conditions, circumstances, limitations and requirements necessary for the Contractor to perform the Work in accordance with the Contract Documents including, but not necessarily limited to, such things as:

- .1 the nature and location of the Work and the Project site, including the availability / restrictions of access to the Project site;
- .2 the character and content of the Work to be done;
- .3 the character and scope of work to be done by other contractors and Owner’s forces;
- .4 the availability of labour, equipment, material, Products and facilities needed for the on-time performance and completion of the Work;
- .5 all labour restrictions, including availability of skilled trades;
- .6 safety hazards and labour contract negotiations which may have an impact on the performance of the Work;
- .7 the location of any required utility service;
- .8 without limiting the generality of the foregoing, any contingency and/or circumstances which may affect the Work.

If the Contractor has not conducted the investigations and examinations described in this paragraph 6.4.0, it is deemed to assume all risk of conditions or circumstances now existing or arising in the course of the Work which could make the Work more expensive or more difficult to perform than was contemplated at the time the Contract was signed. No allowances will be made for additional costs and no claims by the Contractor will be considered for an adjustment in the Contract Price or Contract Time in connection with conditions which were reasonably apparent or which could reasonably have been discovered by such investigations or examinations made before the signing of the Contract.”

3.31.2 Amend paragraphs 6.4.1.1 and 6.4.1.2 by adding the following words to the end of each of those paragraphs:

“and which were concealed from discovery notwithstanding the conduct of the investigations and examinations described in paragraph 6.4.0.”

3.31.3 Amend paragraph 6.4.2 by inserting the words “and were concealed from discovery notwithstanding the conduct of the investigations and examinations described in paragraph 6.4.0” after the word “materially” in the second line.

3.31.4 Delete paragraph 6.4.3 and substitute the following:

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

SC3.32 GC 6.5 DELAYS

3.32.1 Amend paragraphs 6.5.1 and 6.5.2 by deleting the last sentence in each paragraph and substituting the following in each case:

“The Contractor shall be reimbursed by the Owner for reasonable direct costs directly flowing from the delay, but excluding the costs of the Contractor’s head office personnel and overhead costs, and

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excluding any consequential, indirect or special damages, and excluding any claims for loss of profit or opportunity.”

3.32.2 Amend paragraph 6.5.3 by adding the following to the end of that paragraph:

“, in which case the Contractor shall be reimbursed by the Owner for reasonable direct costs directly flowing from the delay, but excluding the costs of the Contractor’s head office personnel and overhead costs, and excluding any consequential, indirect or special damages, and excluding any claims for loss of profit or opportunity.”

3.32.3 Amend paragraph 6.5.4 by adding the following to the end of that paragraph:

“For greater certainty, it is the intention of the parties that an extension for delay will be considered only when the Contractor demonstrates to the Owner that the delay affects the critical path of the Work. Without in any way limiting the generality of the foregoing, it is a condition precedent to the Contractor’s claim for extension of the Contract Time and for additional compensation that the notice provisions in this paragraph be strictly adhered to in each instance, except where the event of delay itself reasonably precludes strict adherence to such notice provisions. If the Contractor fails to comply with such notice provisions, it shall be deemed to have waived the right to claim for the effects of delay.”

3.32.4 Add new paragraphs 6.5.6, 6.5.7, 6.5.8 and 6.5.9 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 shall be extended for such reasonable time as the Consultant may decide in consultation with the Owner 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 subconsultants, project managers, or others employed or engaged by the Owner.

6.5.7 The Contractor shall be responsible for the care, maintenance and protection of the Work in the event of any suspension of construction as a result of the delay described in paragraphs 6.5.1, 6.5.2 or 6.5.3. In the event of such suspension, the Contractor shall be reimbursed by the Owner for the reasonable costs incurred by the Contractor for such care, maintenance and protection, but excluding the costs of the Contractor’s head office personnel. The Contractor’s entitlement to costs pursuant to this paragraph, if any, shall be in addition to amounts, if any, to which the Contractor is entitled pursuant to paragraphs 6.5.1, 6.5.2 or 6.5.3.

6.5.8 Without limiting the obligations of the Contractor described in GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS and GC 9.4 – CONSTRUCTION SAFETY, the Owner may, by Notice in Writing, direct the Contractor to stop the Work where the Owner 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 Project 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 Contract Time or the reimbursement of the Contractor’s costs as provided in paragraphs 6.5.1, 6.5.2 or 6.5.3.

6.5.9 If the Contractor is delayed in the performance of the Work by a Labour Dispute, civil disobedience, riot, sabotage, acts of God or any of the events described in paragraphs 6.5.3.1 through 6.5.3.4 for a period of sixty (60) calendar days or longer, the Owner may terminate the Contract by giving Notice in Writing to that effect. In such event, the Owner shall pay for the Work performed up to the effective date of termination, including mobilization and demobilization costs, and for such additional costs, if any, directly flowing from such termination which are a reasonable consequence of the termination, but excluding any consequential, indirect or special damages, and any claims for loss of profit or opportunity. The Owner shall not be liable to the Contractor for any other claims, costs or damages whatsoever arising from such termination of the Contract.”

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SC3.33 GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

3.33.1 Delete paragraph 7.1.2 and replace it with the following:

"7.1.2 If the Contractor neglects to prosecute the Work properly, or fails or neglects to maintain the latest approved Construction Schedule, or otherwise fails to comply with the requirements of the Contract in a material way, the Owner may, without prejudice to any other right or remedy the Owner may have, give the Contractor Notice in Writing that the Contractor is in default of the Contractor's contractual obligations and instruct the Contractor to correct the default in the 5 Working Days immediately following the receipt of such Notice in Writing, but without affecting in any respect the liability of the Contractor in respect of earlier defaults."

3.33.2 Add a new paragraph 7.1.5A immediately after paragraph 7.1.5 as follows:

"7.1.5A The Owner may terminate the Contract at any time for any or no reason. In such event, the Owner shall pay for the Work performed up to the effective date of termination, including demobilization costs, and for such additional costs, if any, directly flowing from such termination which are a reasonable consequence of the termination, but excluding any consequential, indirect or special damages, and any claims for loss of profit or opportunity. The Owner shall not be liable to the Contractor for any other claims, costs or damages whatsoever arising from such termination of the Contract."

SC3.34 GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT

3.34.1 Amend paragraph 7.2.2, in line 1, by deleting "20" and replacing it with "45".

3.34.2 Amend paragraph 7.2.3 as follows:

- (a) Delete paragraph 7.2.3.1;
- (b) Amend paragraph 7.2.3.3 by adding the words ", except where the Owner has a bona fide claim for setoff," after the word "Consultant";
- (c) Amend paragraph 7.2.3.4 by deleting the words ", except for GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER";
- (d) Add the following at the end:

"The foregoing defaults in contractual obligations shall not apply to the withholding of certificates or payments, or both, in accordance with the Contract Documents."

3.34.3 Delete paragraph 7.2.5 and replace it with the following:

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

7.2.6 If the Contractor terminates the Contract under the conditions described in this GC 7.2, the Contractor shall ensure the Place of the Work is left in a safe and secure condition as required by authorities having jurisdiction and the Contract Documents, and shall be entitled to be paid for all Work performed to the date of termination. Subject to the Contractor's obligation to mitigate costs, the Contractor shall also be entitled to recover the costs directly flowing from and which are a reasonable consequence of the termination, including the costs of demobilization and direct losses sustained on Products and Construction Equipment, but excluding the costs of the Contractor's head office personnel and overhead costs, and

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excluding any consequential, indirect or special damages, and excluding any claims for loss of profit or opportunity.”

SC3.35 GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

3.35.1 Amend paragraphs 8.2.6, 8.2.7 and 8.2.8, in the first line of each paragraph, by deleting “10” and replacing it with “20” in each case.

3.35.2 Add new paragraphs 8.2.9, 8.2.10, 8.2.11, 8.2.12, 8.2.13 and 8.2.14 as follows:

“8.2.9 Within 10 Working Days of receipt of a Notice in Writing given pursuant to paragraph 8.2.6, the Owner or the Contractor may give the Consultant a Notice in Writing containing:

- .1 a copy of the notice of arbitration;
- .2 a copy of GC 8.2, as amended by these Supplementary Conditions;
- .3 any claims or issues which the Contractor or the Owner, as the case may be, wishes to raise in relation to the Consultant arising out of the issues in dispute in the arbitration.

8.2.10 The Owner and the Contractor agree that, upon giving the Notice in Writing provided in paragraph 8.2.9, the Consultant may elect to become a full party to the arbitration commenced pursuant to paragraph 8.2.6. The Owner and the Contractor acknowledge that, if the Consultant so elects, the Consultant shall be a party to the arbitration within the meaning of the Rules referred to in paragraph 8.2.6 by virtue of the agreement between the Consultant and the Owner.

8.2.11 Failure of the Owner or the Contractor to give the Notice in Writing provided in paragraph 8.2.9 shall not prevent either the Owner or the Contractor from commencing or pursuing an application, action, counterclaim or any other proceeding against the Consultant arising out of the issues in dispute in the arbitration between the Owner and the Contractor brought under paragraph 8.2.6.

8.2.12 If the Consultant is given the Notice in Writing contemplated by paragraph 8.2.9, the Consultant may participate in the appointment of the arbitrator and, notwithstanding the Rules referred to in paragraph 8.2.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date on which the Consultant receives the notice described in paragraph 8.2.9.

8.2.13 The arbitrator in an arbitration in which the Consultant is a party may:

- .1 determine whether any notice given pursuant to paragraph 8.2.9 is, in substance, sufficient, the notice requirements being interpreted liberally; and,
- .2 make any procedural order considered necessary to facilitate the participation of the Consultant as a party to the arbitration.

8.2.14 The provisions of paragraph 8.2.9 shall apply mutatis mutandis to written notice to be given by the Consultant to any subconsultant, except that the subconsultant is not entitled to any election as outlined in paragraph 8.2.10 and is deemed to be bound by the arbitration proceeding.”

SC3.36 GC 9.1 PROTECTION OF WORK AND PROPERTY

3.36.1 Amend paragraph 9.1.1.1 by adding the following to the end of that paragraph:

“, which the Contractor could not reasonably have discovered applying the degree of care and skill described in paragraph 3.4.1 of GC 3.4 – DOCUMENT REVIEW.”

3.36.2 Delete paragraph 9.1.2 in its entirety and replace it with the following:

“9.1.2 Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in the Contract Documents or that are

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discoverable by applying to an inspection of the Place of the Work the degree of care and skill described in GC 3.14 – STANDARD OF CARE.”

3.36.3 Add a new paragraph 9.1.5 as follows:

“9.1.5 Without in any way limiting the Contractor’s obligations under this GC 9.1, should the Contractor or any Subcontractor or Supplier cause loss or damage to property, including roads, buildings, structures, paving, grass, sod, trees or other plantings, whether owned by the Owner or others, and whether at the Place of the Work or adjoining it, the Contractor shall be liable for the cost of making good such damage and for the replacement cost of the grass, sod, trees or other plantings damaged, including the cost of any arborist or other consultant, and such costs may be deducted by the Owner from amounts otherwise owing to the Contractor.”

SC3.37 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

3.37.1 Amend paragraph 9.2.6 by inserting the following after the word “responsible” in line 2 of that paragraph:

“or whether any toxic or hazardous substances 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.”

3.37.2 Amend paragraph 9.2.7.3 by inserting the following words after the word “delay” in the second line of that paragraph:

“, but excluding the costs of the Contractor’s head office personnel and overhead costs, and excluding any consequential, indirect or special damages, and excluding any claims for loss of profit or opportunity”

3.37.3 Delete paragraph 9.2.7.4.

3.37.4 Amend paragraph 9.2.8 by inserting the following after the word “responsible” in line 2 of that paragraph:

“or that any toxic or hazardous substances 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.”

3.37.5 Add a new paragraphs 9.2.10 and 9.2.11 as follows:

“9.2.10 Without limiting its other obligations under this GC 9.2, the Contractor acknowledges that its obligations under the Contract include compliance with the Environmental Programs. The Contractor acknowledges that the Owner may suffer loss and damage should the Contractor fail to comply with the Environmental Programs and agrees to indemnify and hold harmless the Owner with respect to any loss or damage to which the Owner is exposed by the Contractor’s failure to comply. The Contractor acknowledges that should it fail to comply with the Environmental Programs, such failure will constitute a failure to comply with the Contract to a substantial degree within the meaning of paragraph 7.1.2 of GC 7.1 – OWNER’S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR’S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT.

9.2.11 The Contractor shall indemnify the Owner and the officers, directors, employees and agents of the Owner in respect of any loss, costs or expense or any fine which might be imposed in respect of any failure by the Contractor to satisfy its obligations under this GC 9.2 and, without limiting the general nature of this indemnity, the Contractor shall indemnify the Owner, its officers, directors, employees and agents if the Project is made subject to an order from a court or government agency requiring remediation of any contamination caused as a result of the Work performed by the Contractor or its Subcontractors.”

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SC3.38 GC 9.4 CONSTRUCTION SAFETY

- 3.38.1 Amend paragraph 9.4.1 by deleting the first line of that paragraph and replacing it with the following: “The Contractor”.
- 3.38.2 Add new paragraphs 9.4.2 to 9.4.5 as follows:
- “9.4.2 Without limiting the generality of paragraph 9.4.1, the Contractor shall be and shall assume all of the responsibilities of the “constructor” under the OHSA and shall file the “Notice of Project” as “constructor” with the appropriate Ministry.
 - 9.4.3 The Contractor represents and warrants to the Owner that appropriate health and construction safety instruction and training have been provided and will be provided to the Contractor’s employees, Subcontractors, Suppliers and all others attending at the Place of the Work. The Contractor also undertakes to provide such health and construction safety instruction and training to the Owner’s representatives, the Owner’s own forces, and other contractors. No comments, suggestions or instructions from the Owner or the Consultant are to be relied upon or assumed to reduce or replace the Contractor’s designation as the “constructor” under the OHSA or its responsibility for construction safety on the Project.
 - 9.4.4 The Contractor shall indemnify and save harmless the Owner and its agents, officers, directors, employees, consultants, successors and assigns from and against any and all liability, costs, expenses, fines, damages and all other consequences arising from any and all safety infractions on the Project, including the payment of legal fees and disbursements on a full indemnity basis.
 - 9.4.5 The Contractor shall ensure that every “controlled Product” used at the Project site shall meet the labelling requirements and shall have an updated corresponding “Material Safety Data Sheet”, all as required by the WHMIS legislation. The Contractor shall ensure that all Material Safety Data Sheets are and are made available for review at the Project site.”

SC3.39 GC 9.5 MOULD

- 3.39.1 Amend paragraph 9.5.3.3 by inserting the following words after the word “delay,” in line 3 of that paragraph:
- “, but excluding the costs of the Contractor’s head office personnel and overhead costs, and excluding any consequential, indirect or special damages, and excluding any claims for loss of profit or opportunity,”

SC3.40 GC 10.1 TAXES AND DUTIES

- 3.40.1 Amend paragraph 10.1.2 by adding the words “, without any mark-up” to the end of that paragraph.
- 3.40.2 Add new paragraphs 10.1.3, 10.1.4, 10.1.5 and 10.1.6 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 or the Owner’s representative, assist with application for any exemption, recovery or refund of 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.
 - 10.1.4 The Contractor shall maintain accurate records of equipment, material and component costs reflecting the taxes, customs duties, excise taxes and Value Added Taxes paid.
 - 10.1.5 Any refund of taxes including, without limitation, any government sales tax, customs duty, excise tax or Value Added Tax, whether or not paid, which is found to be inapplicable or for which exemption may be obtained, is the sole and exclusive property of the Owner. The Contractor agrees to cooperate with the Owner and to obtain from all Subcontractors and Suppliers cooperation with the Owner in the application for any refund of any taxes, which

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cooperation shall include, but not be limited to, making or concurring in the making of an application for any such refund or exemption and providing to the Owner copies, or where required, originals of records, invoices, purchase orders and other documentation necessary to support such applications or exemptions or refunds. All such refunds shall either be paid to the Owner, or shall be a credit to the Owner against the Contract Price, in the Owner's discretion.

10.1.6 Customs duties penalties, or any other penalty, fine or assessment levied against the Contractor shall not be treated as a tax or customs duty for purposes of this GC 10.1."

SC3.41 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

3.41.1 Amend paragraph 10.2.5 by adding the words: "Subject to paragraph 3.4.1 of GC 3.4 – DOCUMENT REVIEW" to the beginning of that paragraph.

3.41.2 Amend paragraph 10.2.6 as follows:

- (a) delete the words "performs work knowing it to be" in the second line and substitute "performs work when it knew or ought to have known that such work is"; and
- (b) delete the words "bear the" in the third line and substitute "indemnify and save the Owner harmless against any"
- (c) add the following sentence to the end of that 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 of GC 12.1 – INDEMNIFICATION, the Contractor agrees to indemnify and to hold harmless the Owner and the Consultant from and against all claims, demands, losses, costs, damages, actions, suits or proceedings resulting from such failure by the Contractor."

SC3.42 GC 10.4 WORKERS' COMPENSATION

3.42.1 Amend paragraph 10.4.1 by inserting the words "with each application for any progress payment, and" after the word "Work," in the first line of paragraph 10.4.1.

SC3.43 GC 11.1 INSURANCE

The Contractor shall provide, maintain and pay for insurance. The contractor shall supply a Certificate of Insurance confirming insurance that will indemnify the Owner for loss of use of the property and property damage with limits not less than: \$5,000,000.00.

3.43.1 Amend paragraph 11.1.1.1 by adding the following sentence to the end of that paragraph:

"To the extent not already described in this paragraph, the Contractor shall provide legal liability coverage for compensatory damages because of bodily injury or property damage to third parties arising from all operations of the insured, including premises and operations, Subcontractors' contingent liability, personal injury resulting from protection of persons / property, contractual liability (blanket), broad form property damage, employees as named insureds, cross liability clause and voluntary medical payments."

3.43.2 Add a new paragraph 11.1.1.4A immediately after paragraph 11.1.1.4 as follows:

"11.1.1.4A In addition to the coverage's described in CCDC 41, include:

- all risks of direct physical loss including flood;
- full replacement value, as basis for settlement;
- the following deductibles: for flood at \$50,000 and other at \$50,000."

3.43.3 Amend paragraph 11.1.2 by adding the following to the end of that paragraph:

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“11.1.2 The Owner’s acceptance of the Contractor’s delivery of any document evidencing the required policies of insurance does not constitute approval or agreement by the Owner that the insurance requirements have been met or that the insurance policies are in compliance with the requirements of this Contract. Failure of the Owner to identify a deficiency from evidence provided will not be construed as a waiver of the Contractor’s obligation to maintain the insurance policies required by this Contract.”

3.43.4 Add new paragraphs 11.1.9 to 11.1.13 as follows:

- “11.1.9 All occurrences and claims shall be reported immediately in writing to the Owner providing at least the following particulars:
- .1 date, time and location of occurrence;
 - .2 cause and description of circumstances;
 - .3 estimate of loss or damage;
 - .4 names and telephone numbers of persons to contact.
- 11.1.10 Except for policies of automobile insurance, all insurance policies in any way related to the Work and secured and maintained by the Contractor shall include clauses stating each underwriter will waive all rights of recovery, under subrogation or otherwise, against the Owner and the Consultant (except in the event of design related acts errors and omissions).
- 11.1.11 All insurance policies and coverage required of the Contractor will be primary over any other insurance that might be carried by the Owner.
- 11.1.12 By requiring insurance, the Owner does not represent that coverage and limits will necessarily be adequate to protect the Contractor. The insurance effected or procured by the Contractor will not reduce or limit the Contractor’s contractual obligation to indemnify and defend the Owner for claims or suits which result from or are connected with the performance of this Contract.
- 11.1.13 Except for policies of automobile insurance, all insurance policies in any way related to the Work and secured and maintained by the Contractor shall include clauses stating each insurer will waive all rights of recovery, under subrogation or otherwise, against the Owner.”

SC3.44 GC 11.2 CONTRACT SECURITY

3.44.1 Delete paragraphs 11.2.1 and 11.2.2 and replace them with the following:

- “11.2.1 The Contractor shall furnish a labour and material payment bond in favour of the Owner, securing payment by the Contractor of all labour and materials to be supplied pursuant to the Contract, in a form satisfactory to the Owner and issued by such surety company as the Owner may approve. The bond shall be for fifty per cent (50%) of the Contract Price.
- 11.2.2 The Contractor shall furnish a performance bond in favour of the Owner, securing the performance by the Contractor of its obligations under the Contract, including the payment obligations arising thereunder, in a form satisfactory to the Owner and issued by such surety company as the Owner may approve. The bond shall be for fifty per cent (50%) of the Contract Price.
- 11.2.3 It is the intention of the Contract that the performance bond shall be applicable to all of the Contractor’s obligations under this Contract 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 that it has provided its surety with a copy of the Contract prior to the issuance of such performance bond.
- 11.2.4 All premiums and related charges for all bonds shall be included in the Contract Price.”

SC3.45 GC 12.1 INDEMNIFICATION

3.45.1 Delete paragraphs 12.1.1 through 12.1.5 and replace them with the following:

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- “12.1.1 The Contractor shall defend, indemnify and hold harmless the Owner, its agents, employees, trustees, officers, directors and assigns from and against all claims, demands, damages, losses, expenses, costs including legal fees, actions, suits or proceedings (collectively “Claims”) by whomsoever made, brought or prosecuted in any manner, arising out of, resulting from or attributable, directly or indirectly, to the Contractor’s or any Subcontractor’s performance or non-performance of the Contract, including Claims arising out of the condition of the Work, the Project site, adjoining land, driveways, streets or alleys used in connection with the performance of the Work, regardless of whether or not caused in part by a party indemnified hereunder. It is expressly understood that the Contractor will save harmless the Owner from all Claims made by any party other than the Contractor itself, financial or otherwise, relating to labour and materials furnished by the Contractor or by others for the Work.
- 12.1.2 The Owner shall indemnify and hold harmless the Contractor, its agents and employees from and against Claims arising out of the Contractor’s performance of the Contract which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the Place of the Work.
- 12.1.3 Notwithstanding the provisions of paragraph 1.1.7 of GC 1.1 – CONTRACT DOCUMENTS, the provisions of GC 12.1 shall govern over the provisions of paragraph 1.3.1 of GC 1.3 – RIGHTS AND REMEDIES.”

SC3.46 GC 12.2 WAIVER OF CLAIMS

3.46.1 Delete paragraphs 12.2.1 through 12.2.10 and replace them with the following:

- “12.2.1 As of the date on which the Owner makes final payment to the Contractor, the Owner expressly waives and releases the Contractor from all claims against the Contractor including without limitation those that might arise from negligence or breach of contract by the Contractor except for one or more of the following:
- .1 those made in writing prior to the date of the final certificate for payment and still unsettled;
 - .2 those arising from the provisions of GC12.1 – INDEMNIFICATION or GC12.3 – WARRANTY;
 - .3 those arising from GC9.2 – TOXIC AND HAZARDOUS SUBSTANCES and arising from the Contractor bringing or introducing any toxic or hazardous substances to the Place of the Work after the Contractor commences the Work;
 - .4 those made by Notice in Writing within a period of six years from the date of Substantial Performance of the Work as set out in the certificate of substantial performance, or within such shorter period as may be prescribed in any limitation statute of the province or territory of the Place of the Work and arising from any liability of the Contractor for damages resulting from the Contractor’s performance of the Contract or substantial defects or deficiencies in the Work for which the Contractor is proven responsible. As used herein, “substantial defects or deficiencies” means those defects or deficiencies in the Work where the reasonable cost of repair of such defects or deficiencies, either individually or in the aggregate, exceeds:
 - (A) if the Contract Price is \$2,000,000 or less, the sum of \$50,000, before Value Added Taxes;
 - (B) if the Contract Price exceeds \$2,000,000, the sum of \$100,000, before Value Added Taxes.
- 12.2.2 As of the date of Substantial Performance of the Work, the Contractor expressly waives and releases the Owner from all claims which it has or reasonably ought to have knowledge of that could be advanced against the Owner including without limitation those that might arise from the negligence or breach of contract by the Owner except:
- .1 those for which Notice in Writing was given prior to the Contractor’s application for Substantial Performance of the Work and still unsettled; and

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- .2 claims for payment for Work completed after the Contractor's application for Substantial Performance of the Work."

SC3.47 GC 12.3 WARRANTY

- 3.47.1 Amend paragraph 12.3.1 by adding the following to the end of that paragraph:

"Notwithstanding the foregoing, if an item of Work is not completed at Substantial Performance of the Work, except for extended warranties as described in paragraph 12.3.6, the warranty period for such item of Work shall be one year from the date that such item of Work has been completed and accepted in writing by the Owner."

- 3.47.2 Amend paragraph 12.3.2 as follows:

- (a) by inserting the words, "Subject to paragraph 3.4.1 of GC 3.4 – DOCUMENT REVIEW" at the beginning of that paragraph; and

- (b) by adding the following to the end of that paragraph:

"If the Contractor has been permitted to make use of permanent equipment or systems, as provided in GC 3.15 – CONTRACTOR'S USE OF PERMANENT EQUIPMENT OR SYSTEMS, such permanent equipment or systems shall be subject to the same warranty as described in this GC 12.3 and shall be judged, for purposes of assessing compliance with the warranty, as though the equipment or system was new, clean and unused by the Contractor, except for normal commissioning and startup activities, prior to the date of Substantial Performance of the Work."

- 3.47.3 Add the following to the end of paragraph 12.3.4:

"The Contractor shall perform all remedial and warranty work at its own cost and expense and at a time convenient to the Owner, which may be outside of normal working hours. The Owner shall provide reasonable access to those portions of the Project necessary to perform such work, subject to the Owner's operational requirements. Prior to performing the remedial and warranty work, the Contractor shall provide, for the Owner's review and approval, a proposed schedule for the performance of such work."

- 3.47.4 Add a new paragraph 12.3.7 as follows:

"12.3.7 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."

SC3.48 PART 13 – OTHER PROVISIONS

- 3.48.1 Add new "PART 13 – OTHER PROVISIONS" as follows:

"PART 13 OTHER PROVISIONS

GC 13.1 CONTRACTOR LIABILITY FOR DAMAGES

- 13.1.1 Notwithstanding any other provision in this Contract, if the Owner, as a result of the Contractor's act or omission or breach of contract, incurs damages, costs, fees or expenses, including costs of additional services performed by the Consultant or any subconsultants and including the Owner's reasonable solicitor and own client costs, whether or not such act, omission or breach results in any lien, lien action or other legal proceeding, and whether or not such act, omission or breach results in the Owner taking any of the steps provided for in GC 7,1, all such damages, costs, fees and expenses shall be charged to the Contractor and the Owner shall be entitled to set off and deduct all such damages, costs, fees and expenses from any amount owing to the Contractor and any security or other funds held by the Owner.

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If there is no amount owing by the Owner to the Contractor at that time, then the Contractor shall reimburse the Owner for all of the said damages, costs, fees and expenses.

GC 13.2 OWNERSHIP OF MATERIALS

13.2.1 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, and shall be free of any encumbrances. The Contractor shall remove all surplus or rejected materials when notified to do so by the Consultant.

GC 13.3 DAILY REPORTS / DAILY LOGS

13.3.1 The Contractor shall cause its supervisor, or another competent person, to prepare a daily log or diary reporting on weather conditions, workforce of the Contractor, Subcontractors, Suppliers and any other forces on site and also record the general nature of Project activities. Such log or diary shall also include any extraordinary or emergency events which may occur and also the identities of any persons who visit the site who are not part of the day-to-day workforce.

13.3.2 The Contractor shall also maintain records, either at its head office or at the Project site, recording manpower and material resourcing on the Project, including records which document the activities of the Contractor both as planned and actual.

13.3.3 Upon request by the Owner or the Consultant, the Contractor shall make available for inspection and copying all of the records generated pursuant to this GC 13.3, along with any other routine Project records ordinarily maintained by the Contractor.

GC 13.4 LIENS AND ACTIONS

13.4.1 The Contractor shall save and keep the Owner and the Place of the Work free from all construction liens and all other liens whatsoever arising out of the Work. If any lien is claimed, filed or registered or any written notice of lien is received by reason of labour, services, equipment, materials or any Work supplied or claimed to have been supplied by or through a Subcontractor or Supplier, the Contractor shall, at its own expense, within ten (10) Working Days of being notified of the lien or written notice of lien, secure the discharge, release, vacating or withdrawal of such lien or written notice of lien by payment or by giving security or in such other manner as is or may be required or permitted by law, failing which the Owner may, but shall not be required, take such steps as it, in its absolute discretion, may deem necessary to release, vacate or discharge the lien or written notice of lien.

13.4.2 If a lien action or any other action or legal proceeding arising out of the Project is commenced, the Contractor shall take all reasonable steps to remove the Owner from such action or legal proceeding, and shall indemnify the Owner and hold it harmless in such action or legal proceeding.

13.4.3 All amounts, including solicitor and own client costs, disbursements, interest, borrowing and premium or other bonding costs and/or charges incurred by the Owner in releasing, vacating, discharging or otherwise dealing with a lien, written notice of lien and/or defending or otherwise dealing with an action or legal proceeding, shall be charged to the Contractor and shall be set off and deducted from any amount owing to the Contractor. If there is no amount owing by the Owner to the Contractor at that time, then the Contractor shall reimburse the Owner for all of the said costs and associated expenses.

GC 13.5 ADVERTISING AND PUBLIC STATEMENTS

13.5.1 The Contractor shall not publish, issue or make any statements or news release, electronic or otherwise, concerning the Contract, the Work, or the Project, and shall not use the Owner's name or logo without the prior express written consent of the Owner. For greater certainty, the Contractor shall obtain the prior written approval of the Owner for any public advertising, written public sales promotions, press release or other general publicity matter, in which the name or logo of the Owner is mentioned or used, or in which words are used from which any connection with the Owner may be inferred. The Contractor will not erect or permit the erection of any sign or advertising without the prior written approval of the Owner.

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GC 13.6 AMENDMENTS TO THE CONTRACT

- 13.6.1 No alteration or amendment to this Contract, no course of conduct or dealing between the parties, and no express or implied acceptance of alterations or amendments to the Contract shall be binding unless it is in writing and signed by each party.
- 13.6.2 No waiver by or on behalf of a party of any breach of a provision of this Contract shall be binding upon the party unless it is expressed in writing and duly executed by the party or signed by its fully authorized representatives, and such a waiver shall not operate as a waiver of any future breach, whether of a like or different character. No waiver shall be inferred from or implied by the conduct of any party.”

END OF SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.1 Contract Documents

- .1 Work will be performed under one Contract; the Contract will be in the form of the Agreement between Owner and Contractor, Canadian Standard Construction Document, CCDC 2, 2008, Stipulated Price Contract as amended by the Supplementary Conditions.

1.2 General Conditions

- .1 The General Conditions of the Stipulated Price Contract, Standard Construction Document, CCDC 2, 2008; and Supplementary Conditions, will govern the performance of each Section of the Specifications.

1.3 Specifications

- .1 Division 1, General Requirements, of the Specifications generally specifies work and co-ordination that is the direct responsibility of the Contractor, but shall not be interpreted to define absolutely the limits of responsibility that must be established between the Contractor and his Subcontractors by their separate agreements.
- .2 Ensure that Subcontractors understand that the General Conditions of the Contract, Supplementary Conditions, and Division 1, General Requirements, apply to Sections of the Specifications governing their work.
- .3 Work in the Specifications is divided into descriptive Sections which are not intended to identify absolute contractual limits between Subcontractors, nor between the Contractor and his Subcontractors. The Contractor shall organize division of labour and supply of materials essential to complete the Project in all its parts.
- .4 The provisions of all Sections of Division 1 shall apply to each Section of Divisions 2 to 17, inclusive, which are included in the Specifications.
- .5 Where the word "provide" is used in these Contract Documents, it shall mean "supply and install" unless specifically and clearly indicated otherwise.
- .6 Wherever words "acceptable", "approved", "reviewed", "satisfactory", "directed", "selected", "designated", "required", "submit", "instructed", "permitted" or similar words or phrases are used in Contract Documents or referenced standards, it shall be understood, that "by" or "to" "the Consultant" follows, unless context clearly provides otherwise.
- .7 Wherever in the Contract Documents the word "include" is used in any form, the items of work listed following shall not be interpreted to be restricted to only those items that are listed.
- .8 Wherever in the Contract Documents the words "indicated" or "shown" are used they shall apply as meaning "indicated on Drawings and/or Schedules" or "shown on Drawings and/or Schedules" unless the context expresses another meaning.
- .9 Wherever in the Specifications it is specified that work to which reference is made shall proceed or shall meet approval, direction, selection or request of jurisdictional authorities or others, such approval, direction, selection or request shall be in writing.
- .10 Wherever in the Specifications it is specified that work shall be repaired, made good or replaced, it shall be performed without any additional cost to the Owner.

- .11 Wherever in the Contract Documents the terms "make good" or "made good" are used, such making good shall mean that new or existing work shall be restored after being damaged or cut or patched using materials identical to the original materials, with visible surfaces matching the appearance of the original surfaces in all details, and with non-apparent junctions between new and original surfaces. In the event that identical materials for making good cannot be obtained, materials shall be used that visually match the original materials as closely as possible and only as reviewed with the Consultant. Replaced materials shall perform equally or better than the original materials, providing that their use is not detrimental to the structural integrity of the construction with which they are incorporated.

1.4 Examination

- .1 The Contractor shall visit the site and be satisfied as to conditions affecting the work before submitting a tender. Misinterpretation of any requirements of these specifications shall not relieve the Contractor of responsibility. No allowance will be made for any extra expense incurred by the Contractor through failure to do so.

1.5 Permits

- .1 Consultant on behalf of the Owner, will apply for and obtain the General Building Permit.
- .2 Owner will pay for the General Building Permit.
- .3 Apply, obtain and pay for all other permits from all authorities having jurisdiction, including, where required, inspection fees and permits.

1.6 Codes

- .1 Perform work in accordance with Ontario Building Code and National Building Code and any other code of national, provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply. Codes shall be latest edition, including all amendments up to tender closing date.
- .2 Meet or exceed requirements of:
 - .1 contract documents,
 - .2 specified standards, codes and referenced documents.

1.7 Documents Required

- .1 Maintain at job site, one copy each of following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed shop drawings.
 - .5 Change orders.
 - .6 Minutes of meetings.
 - .7 Consultant site visit reports.
 - .8 Other modifications to Contract.
 - .9 Field test reports.
 - .10 Copy of approved work schedule.
 - .11 Manufacturers' installation and application instructions.

1.8 Construction Schedule

- .1 Provide at Pre-Construction Meeting, construction schedule showing anticipated progress stages

and final completion of work within time period required by Contract documents. Refer to GC 3.5 and Supplementary Conditions.

1.9 Shop Drawing Schedule

- .1 Provide shop drawing schedule in accordance with GC 3.11, Section 01 34 00 and CCDC indicating dates for Submission of shop drawings, material lists and samples. Prepare schedule in consultation with subcontractors and material and equipment suppliers.
- .2 Contractor shall maintain schedule up-to-date, tracking submission and return dates between suppliers, Contractor, subcontractors, Consultant, Owner and other parties.

1.10 Cost Breakdown

- .1 Before submitting first progress claim submit breakdown of Contract price (Schedule of Values) in detail as directed by Consultant and aggregating contract price. After approval by Consultant cost breakdown will be used as basis for progress payment.

1.11 Preconstruction Meeting

- .1 As soon as possible and no later than 21 days after project award, the Consultant will arrange a meeting between Consultant, Subconsultants, Owner, General Contractor, Subcontractors, Superintendents, Inspection and Testing company representatives, and representatives of others whose coordination is required during construction.
- .2 Purpose of meeting is as follows:
 - .1 Review project communications procedures.
 - .2 Review contract administration requirements including submittals, payment and change order procedures.
 - .3 Review construction schedule and identify all critical points on construction schedule for positive action.
 - .4 Identify any product availability problems and substitution requests.
 - .5 Establish site arrangements and temporary facilities.
 - .6 Identify Consultant's inspection requirements.
 - .7 Review any points which, in Owner's, Consultant's and Contractor's opinion, require clarification.
- .3 The Consultant shall be responsible for preparing and distributing the minutes of the meeting.

1.12 Project Meetings

- .1 Attendance at Project Meetings is mandatory by all subtrades. It is the responsibility of subcontractors to be fully prepared for all meetings so that all items on the agenda can be expedited quickly.
- .2 Once a month during or immediately after regular site meeting, Consultant, Owner and Contractor shall review Contractor's application for payment, updated construction schedule, all outstanding Change Notices and Change Orders.
- .3 The Consultant shall be responsible for preparing and distributing the minutes of the meeting.

1.13 Project Coordination

- .1 Contractor shall assume full responsibility for the coordination and cooperation of all trades.

- .2 Ensure that the flow of information and materials and the availability of work forces is adequate for satisfactory and expeditious completion of the work.
- .3 Report to Consultant on progress of work in relation to schedule.
- .4 Employ a qualified superintendent who shall:
 - .1 Be on the site at all times.
 - .2 Have full authority to act on the Consultant's instructions.
 - .3 Control the work throughout.
 - .4 Not be changed for duration of project, without prior approval of Consultant.
- .5 Responsibility as to which sub-trade provides required work to be built-in or supplied rests entirely with the General Contractor. Differences in interpretation of Specifications or Drawings as to which trade shall provide certain work shall not be grounds for payment of extras. The Mechanical and Electrical subcontractors shall also be responsible for coordinating their respective work with each other and all related trades for completing the work of their Divisions and as directed by the General Contractor.
- .6 Work not to be included in the Contract, as noted "NIC" on the Drawings, shall be governed by Article GC 3.2.

1.14 Setting Out of Work

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated. Lay out work from control bench marks and verified reference points. Protect and preserve bench marks and reference points.
- .2 Provide devices needed to lay out and construct work.
- .3 Supply stakes and other survey markers required for laying out work.
- .4 Verify grades, lines, levels, and dimensions indicated and report any errors, omissions, or inconsistencies to the Consultant before commencing work. Confirm job dimensions immediately to allow prompt checking of shop and other drawings.
- .5 Ensure that necessary job dimensions are taken and trades are coordinated for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions, and for coordination.
- .6 Verify that work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent work, as set out by requirements of the drawings, and ensure that work installed in error is rectified before construction continues.
- .7 Do not scale directly from the drawings. If there is ambiguity or lack of information, immediately inform the Consultant and await his instructions before proceeding. Be fully responsible for rectifying, altering or redoing any work resulting from disregarding this clause. All details and measurements of any work which is to fit or to conform with work installed shall be taken at the site.

1.15 Location of Equipment and Fixtures

- .1 Location, arrangement and size of equipment, fixtures, ducts, piping, conduit 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 his approval for actual location. Any relocation caused by Contractor's failure to consult with Consultant shall be done by Contractor at no extra cost to Contract. Where job conditions require reasonable changes in indicated locations and arrangements, make changes at no additional cost.
- .4 Conserve space and coordinate with work of other Sections to ensure that ducts, pipes and conduits will fit into allocated wall and ceiling spaces.
- .5 Submit field drawings to indicate relative position of various services and equipment when r required by Consultant.
- .6 Where ducts, piping and conduits are permitted to be exposed they shall be neatly and uniformly laid out parallel to adjacent building lines and parallel to each other where they run in the same direction. Review exposed installations with Consultant prior to start of work. At no cost to Owner make changes to exposed work as directed by the Consultant where such work is not installed in accordance with Consultant's prior directions.

1.16 Concealment

- .1 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.17 Cutting, and Patching

- .1 Obtain Consultant's written permission before cutting, boring or sleeving load-bearing members.
- .2 Cut and patch as required to make work fit.
- .3 Make cuts with clean, true, smooth edges.
- .4 Make patches invisible in final assembly.
- .5 Coordinate and accurately locate inserts, sleeves, connections and similar items required by all trades, or required by site conditions.
- .6 Cutting and patching of work shall be by trade specializing in work to be cut or patched. Payment shall be by trade requiring cutting and patching work.
- .7 Fit construction tightly to ducts, pipes and conduits to stop air movement completely. The Section performing Work that penetrates a fire, air, vapour, moisture, thermal or acoustic separation of the building shall pack voids tightly with rock wool; seal air, vapour and moisture barriers; and caulk joints as approved by Consultant to ensure that no air movement through the penetration is possible.

1.18 Additional Drawings

- .1 Consultant may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.

1.19 Building Smoking Environment

- .1 Smoking is prohibited on school property.

1.20 Workmanship

- .1 All work performed shall be done by mechanics skilled in their respective trades. Where required by code or other by-laws and regulations, trades people shall be licensed in their trade. All workmanship shall be of the highest calibre in accordance with the best standard practice.

1.21 Damages

- .1 The Contractor shall be responsible for all or any damages to the building and/or contents, caused by their forces for whatever cause and shall indemnify and save The Simcoe County District School Board harmless from injury to all pupils and employees when working within and around the building, while under contract with The Simcoe County District School Board.

1.22 Site Progress Records

- .1 Maintain at site a permanent written record of progress of the Work. Make the record available at all times with copies provided when requested. Include in record each day:
 - .1 Weather conditions with maximum and minimum temperatures.
 - .2 Conditions encountered during excavation.
 - .3 Commencement and completion dates of the work of each trade in each area of Project.
 - .4 Erection and removal dates of formwork in each area of Project.
 - .5 Dates, quantities, and particulars of each concrete pour.
 - .6 Dates, quantities, and particulars of roofing installation.
 - .7 Attendance of Contractor's and Subcontractor's work forces at Project and a record of the work they perform.
 - .8 Visits to site by Owner, Consultant, Subconsultants, jurisdictional authorities, testing companies, Contractor, Subcontractors, and suppliers.
- .2 Maintain a computer-based progress chart in a format approved by Consultant. Show on chart proposed construction schedule and the progress achieved by Contractor and each Subcontractor.

End of Section

PART 1 - GENERAL

1.1 Construction Schedule

- .1 Provide within 14 working days after Bid opening, a construction schedule showing anticipated progress stages and final completion of the Work as required by the Contract documents. Modify schedule if required by Consultant and resubmit. Approved schedule shall be the "Construction Schedule" for the Work. The purpose of the Construction Schedule is to ensure adequate planning and execution of the Work and to evaluate the progress of the Work. The Construction Schedule is to include each of the Construction Divisions 1 through 17 and each major trade or operation within each Division is to be identified.
- .2 Time shall be of the essence. Substantial Performance of the Work, as certified by the Consultant, shall be attained by **AUGUST 23, 2019** and Total Performance by 30 days following the date of Substantial Performance.
- .3 The Construction Schedule shall be in the form of a computer generated critical path and bar chart. Provide a separate bar for each trade or operation. Provide a horizontal time scale identifying the first day of each week. The format for listings should follow the Table of Contents of the specification and have required trades and operations within these Sections added accordingly. The Mechanical and Electrical trades are to be identified by tasks and phases.
- .4 Construction Schedule submission shall be coordinated with the General Conditions and Section 00 01 20 Supplementary Conditions to indicate the following:
 - .1 Commencement and completion dates of contract.
 - .2 Commencement and completion dates of subcontractors.
 - .3 Critical dates and activities.
 - .4 Order and delivery times for materials and equipment. Include shop drawing approval dates.
 - .5 The following target achievement dates are to be identified in the Schedule:
 - a) Building Close-in
 - b) Completion of Waterproofing
 - c) Completion of Roofing
 - d) Mechanical and Electrical Rough-in
 - e) Insulation and vapour barrier completion prior to close-in
 - f) Start of finishing trades
 - g) Start of commissioning activities
 - h) Fire Alarm Verification
 - i) Building Department Occupancy Inspections
 - j) Final Cleaning
 - k) Substantial Performance
 - l) Completion of Deficiencies
 - .6 Any other information relating to the orderly progress of Contract, considered by Contractor to be pertinent.
- .5 Schedule shall be in two line format with actual dates plotted below proposed dates. Schedule shall indicate progress relative to original schedule.
- .6 Prepare Schedule in consultation with sub-contractors and material and equipment suppliers. Provide evidence of consultation to Consultant.
- .7 The following schedules are required as part of the Construction Schedules Package:
 - .1 Construction Progress Schedule
 - .2 Submittal Schedule for Shop Drawings and Product Data

.3 Submittal Schedule for Samples

1.2 Updating and Monitoring

- .1 Interim reviews of work progress based on Construction Schedule will be conducted as decided by Consultant and Schedule updated by Contractor in conjunction with and to approval of Consultant. Updated schedule shall be available at all project meetings.
- .2 Display updated copy of Schedule in site office during complete construction period and actual progress plotted weekly.
- .3 Submit an updated schedule showing actual progress of the work plotted against original schedule with each application for payment.
- .4 Conduct regular meetings with subcontractors to co-ordinate the Work and monitor the schedule.
- .5 Highlight slippage on Schedule stating the reason for slippage, impact to the overall Schedule, and a statement of necessary corrective action in order to adhere to the Construction Progress Schedule.
- .6 When requested provide a statement of monitoring, expediting and controlling of critical activities.
- .7 Indicate the effects of changes to the Work on the Construction Progress Schedule.

1.3 Overtime Work

- .1 Should the Work fail to progress according to the Construction Schedule, and if in the opinion of the Consultant the Work cannot be completed within the time stated in the Construction Schedule, the Contractor and/or its subcontractors shall work such additional time, including Sundays and Statutory holidays and shifts over and above the normal hours worked by the applicable trades or hire additional workers as may be required to meet the scheduled completion date, all without additional cost to the Owner.

Refer to Instructions to Bidders for additional requirements.

End of Section

PART 1 - GENERAL

1.1 General

- .1 Include in the Stipulated Price a cash allowance in the amount of **\$35,000.00** (Thirty Five thousand dollars, zero cents) for work specified in this Section.
- .2 Expend cash allowance only as directed by Consultant. All benefits from unexpended portions of allowance shall revert to the Owner.
- .3 Include in each expenditure from cash allowance applicable taxes as specified in the General Conditions of the Contract.
- .4 Progress payments for work and material authorized under cash allowance will be made in accordance with contract terms of payment.
- .5 Invoices will be required to verify expenditures.
- .6 Changes in the dollar amount of cash allowance will be made by Change Order.
- .7 Contract sum shall include Contractor's overhead and profit for all cash allowance work.
- .8 All cash allowances are to be CARRIED BY THE GENERAL CONTRACTOR. Allowances called out in Div. 15 or 16 specifications are for information to the trade only.
- .9 Trades engaged to perform cash allowance work may be appointed by the Owner. All trades performing work under cash allowance are required to perform their work as a subcontractor to the General Contractor.
- .10 The Contract Price, and not the Cash Allowance, includes the Contractor's profit in connection with such cash allowance.

1.2 Items of Work Under Cash Allowance

- .1 Existing Water Service
 - .1 The existing 100mm cast iron water service is to be capped and disconnected at the street service. It is to be removed when the new 100mm PVC water service is installed from the fire hydrant to the building water service.
 - .2 The new Hydro service is being installed at the same time as this scope of work. Coordinate the work with the Clearview Public Works (Water/ Sewer). Contact Todd Patton at 705-428-6230 and ensure there is due notice.
- .2 Electrical Items
 - .1 Local utility costs relating to transformer supply, disconnect, connections, metering, and re-connect.
- .3 Inspection and Testing
 - .1 Costs associated with Inspection and Testing as identified in the contract documents as Owner responsibility. This shall not include inspection and testing identified as being part of the General Contractor scope of work in the contract documents. The Inspection and Testing responsibility of the Owner shall be by an Owner appointed independent Inspection and Testing Company.

End of Section

1.1 Modifications to Contract

- .1 Supplemental or Site Instruction: Shall refer to information as issued by the Consultant, consistent with the intent of the Contract Documents, and will not involve an adjustment in Contract Price or Contract Time unless Consultant is notified within 20 days of issuance. A Site Instruction may be issued by the Consultant where an immediate response is required to an on-site condition. This form will authorize the Contractor to proceed with the change, with the stipulation that accurate accounts of costs be recorded, and may contain an upset cost, as agreed upon by the Owner and the Contractor.
- .2 Contemplated Change Order: as issued by the Consultant, will notify the Contractor of an impending or proposed change to the Work, and will require submission of a quotation from the Contractor and all affected Subcontractors for each item noted. Submit quotation within the time period stipulated on the form, and indicate separate line items for labour and materials in each case. Work outlined in a Proposed Change must not proceed without the issuance of a Change Order signed by the Owner.
- .3 Change Order: will be issued by the Consultant upon review and approval of quotations for a Proposed Change, and authorizes the Contractor to proceed with the change(s) proposed. A Change Order will amend the Contract Price, and/or the Contract Time.

End of Section

PART 1 - GENERAL

1.1 General

- .1 Make submittals specified in this Section to the Consultant unless otherwise noted.
- .2 Ensure that submissions requiring review and comment, or approval, are made to allow sufficient time for review without delaying progress of scheduled construction.
- .3 Be responsible for payment of charges for delivery of submissions and resubmissions to Consultant.

1.2 Before Commencement of Work

- .1 Performance Bonds and Labour and Materials Payment Bonds as specified.
- .2 Insurance policies as specified in the General Conditions and the Supplementary Conditions.
- .3 Workers' Compensation Board Certificate of Clearance.
- .4 Construction Schedule as specified in Section 01 13 00 and General Instructions.
- .5 Shop Drawing Schedule as specified in Section 01 34 00.
- .6 Cost Breakdown (Schedule of Values) as specified in Section 01 10 05.
- .7 Permits required for work of Division 15, Mechanical; Division 16, Electrical.
- .8 Permits for temporary structures, hoists, signs and similar items.

1.3 During Construction

- .1 Inspection and testing reports as specified in Section 01 45 00.
- .2 Shop drawings, product data and samples as specified in Section 01 34 00.
- .3 Interference Drawings:
 - .1 Provide drawings to indicate clearances between construction elements such as slabs, beams, drops and ceilings, and to confirm the capability of such clearances to accommodate the various required services.
 - .2 Failure to comply with this requirement and in event that services are in conflict with one another, and or with the construction elements, will result in such work having to be rejected and re-done at no extra cost to the Owner.
 - .3 Interference drawings to be submitted before the first Progress Payment Application is made. Failure to submit acceptable interference drawings by the first Progress Payment Application will be grounds for all funds relating to the trade with incomplete interference drawings being withheld from the progress payment.
- .4 Award separate contracts as may be required by Cash Allowances, Section 01 20 00.
- .5 Mock-ups as specified in Section 01 34 00.

- .6 Progress Records as specified in Section 01 10 05.
- .7 Revised Construction Schedule as specified in Section 01 10 05.
- .8 Applications for Payment as specified in General Conditions and the Supplementary Conditions.
- .9 Take progress photographs as specified in this Section.
- .10 Maintain Record Drawings as specified in this Section.

1.4 At Substantial Performance

- .1 Provide two (2) sets of complete Operating and Maintenance Manuals including operating and maintenance data, warranties, certificates of approval, finish hardware schedule, paint schedule, shop drawings, any other reports, charts, diagrams specified in Section 01 73 00. Warranties may be submitted within 14 days of date of Substantial Performance. Manuals are to be submitted prior to Substantial Performance inspection.
- .2 Maintenance materials, special tools and spare parts specified in Section 01 73 00.
- .3 Final and complete Project Record Drawings as specified in this Section.
- .4 Complete the requirements of Section 01 70 00, Contract Closeout.

1.5 Project Record Drawings

- .1 Contractor to obtain a clean set of white prints for project record drawing purposes, either from initial sets provided by Consultant or by Owner expenses.
- .2 Provide as-built drawings of the completed Work which shall record, as the Work progresses, work constructed differently than shown on Contract Documents. Record all changes in the Work caused by site conditions; by Owner, Consultant, Subconsultant, Contractor, and Subcontractor originated changes; and by site instructions, supplementary instructions, field orders, change orders, addenda, correspondence, and directions of jurisdictional authorities. Accurately record location of concealed structure, and mechanical and electrical services, piping, valves, conduits, pull boxes, junction boxes and similar work not clearly in view, the position of which is required for maintenance, alteration work, and future additions. Do not conceal critical work until its location has been recorded.
- .3 Record changes in the Work on white prints in red ink.
- .4 Record following information:
 - .1 Depths of various elements of foundation in relation to first floor level.
 - .2 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface feature.
 - .3 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
- .5 Dimension location of concealed work in reference to building walls, and elevation in reference to floor elevation. Indicate at which point dimension is taken to concealed work. Dimension all terminations and offsets of runs of concealed work.
- .6 Identify each record drawing as "Project Record Copy". Maintain drawings in good condition and do not use them for construction purposes.

- .7 Maintain Project record drawings in a state current to Project. Record drawings are to be reviewed at each site meeting and will be considered a condition precedent for validation of applications for payment. The Consultant's visual inspection will constitute proof that record drawings are current. At completion of project, neatly transfer recorded notations to second set of white prints. Submit both sets of white prints to Consultant.
- .8 Prior to Substantial Performance, Contractor shall submit one clean, neat copy of As-built drawings to Consultant for review and approval.
- .9 The Contractor will be responsible for transferring As-built information on white prints to digital files in Autocad format for submission to the Owner on CD. The Consultants will provide tender copy of digital Autocad files for use by Contractor.

End of Section

PART 1 - GENERAL

1.1 General

- .1 This section specifies general requirements and procedures for Contractors submissions of shop drawings, product data and samples to Consultant for review. Additional specific requirements for submissions are specified in individual Sections of Divisions 2 to 16.
- .2 Do not proceed with work until relevant submissions are reviewed by Consultant.
- .3 Present shop drawings and product data in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 The General Contractor is to review submissions for completeness and conformance with the Contract Documents, before submitting them to the Consultant.
- .6 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submissions.
- .7 Make any changes in submissions which Consultant may require consistent with Contract Documents and resubmit as directed by Consultant.
- .8 Notify Consultant, in writing, when resubmitting, of any revisions other than those requested by Consultant.

1.2 Submission Requirements

- .1 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.
- .2 Allow 14 days for Consultant's review of each submission.
- .3 Accompany submissions with transmittal letter.
- .4 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractors authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.

- .5 After Consultant's review, distribute copies. See Section 01 10 05.

1.3 Shop Drawings

- .1 Shop drawings: original drawings, or modified standard drawings provided by Contractor, to illustrate details of portions of Work, which are specific to project requirements. Consultant's drawings are not to be used for shop drawings.
- .2 Submit **7 copies** of shop drawings for which submission is requested in Sections of the Specifications. When requested submit two additional copies of shop drawings for Owner at same time as original submission. Owner will review and submit comments directly to Consultant and Consultant will incorporate such comments into Consultant's review.
- .3 Cross-reference shop drawing information to applicable portions of Contract Documents.
- .4 Show on shop drawings:
 - .1 Clear and obvious notes of any proposed changes from drawings and specifications.
 - .2 Fabrication and erection dimensions.
 - .3 Provisions for allowable construction tolerances and deflections provided for live loading.
 - .4 Details to indicate construction arrangements of the parts and their connections, and interconnections with other work.
 - .5 Location and type of anchors, and exposed fastenings.
 - .6 Materials and finishes.
 - .7 Physical dimensions of materials including thickness and gauges.
 - .8 Descriptive names of equipment.
 - .9 Mechanical and electrical characteristics when applicable.
 - .10 Information to verify that superimposed loads will not affect function, appearance, and safety of the work detailed as well as of interconnected work.
 - .11 Assumed design loadings, and dimensions and material specifications for load-bearing members.
 - .12 Dimensions and dimensioned locations of proposed chases, sleeves, cuts, and holes in structural members.
 - .13 Time required for fabrication and installation, if applicable.
- .5 Following Consultant's review, 5 copies of shop drawings will be returned to Contractor marked "Reviewed", "Reviewed as Noted", or "Revise and Resubmit". Contractor shall revise and resubmit such drawings within 8 days.

1.4 Shop Drawings Review

- .1 The review of shop drawings by Consultant is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that Consultant approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all subtrades.

1.5 Product Data

- .1 Product data: manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .2 Submit 7 copies of product data for which submission is requested in Sections of the Specifications.

- .3 Delete information not applicable to project.
- .4 Supplement standard information to provide details applicable to project.
- .5 Cross-reference product data information to applicable portions of Contract Documents.

1.6 Samples

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Where colour, pattern or texture is criterion, submit full range of samples.
- .3 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

1.7 Mock-Ups

- .1 At Site, in area approved by Consultant, erect sample mock-up of complete construction assembly where requested by specification Sections. Mock-ups shall show colour range of materials, required reinforcing, exterior wall assembly components such as insulation, air/vapour barrier and flashing membrane. Do not remove mock-up until mock-up has been approved. Approved mock-up shall be standard of comparison for completing the work and shall not be destroyed or moved until authorized by Consultant.

End of Section

PART 1 - GENERAL

1.1 Standards

- .1 Maintain project in accordance with the latest edition of the Occupational Health and Safety Act.

1.2 Fires

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

1.3 Disposal of Wastes

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .4 At reasonable intervals during progress of Work, clean site and public properties and dispose of waste materials, debris and rubbish.
- .5 Provide on site containers for collection of waste materials, debris and rubbish. Provide separate containers for recyclable materials.

1.4 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.5 Pollution Control

- .1 Maintain clean building site. Collect and dispose of wind blown waste materials.
- .2 Cover dry materials to prevent blowing dust and debris.
- .3 Prevent materials from contaminating air beyond application area by providing temporary enclosures.
- .4 Refer to Section 01 71 00 Cleaning.

End of Section

PART 1 - GENERAL

1.1 Section Includes

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mock-ups.
- .4 Mill tests.
- .5 Equipment and system adjust and balance.

1.2 Related Sections

- .1 Section 01 60 00 - Material and Equipment: Material and workmanship quality, reference standards.

1.3 Inspection

- .1 Refer to the General Instructions Section 01 10 05.
- .2 The Owner and the Consultant shall have access to the Work. If part of the Work is in preparation at locations other than the Place of the Work, access shall be given to such work whenever it is in progress.
- .3 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Specifications, Consultant instructions, or the law of the Place of the Work.
- .4 If the 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 the inspections or tests satisfactorily completed and make good such Work.
- .5 The Consultant may order any part of the Work to be examined if the Work is suspected to be not in accordance with the Contract Documents. If, upon examination such work is found not in accordance with the Contract Documents, correct such work and pay the cost of examination and correction. If such Work is found in accordance with the Contract Documents, the Owner shall pay the cost of examination and replacement.

1.4 Independent Inspection Agencies

- .1 Independent Inspection/Testing Agencies will be appointed by the Owner for the purpose of inspecting and/or testing portions of Work and will be paid through Cash Allowance expense, unless noted otherwise by Contractor in these specifications.
- .2 Co-ordination and notification for inspection and testing is the responsibility of the Contractor.
- .3 Provide equipment required for executing inspection and testing by the appointed agencies.
- .4 Co-ordination and notification of inspection/testing agencies does not relieve the responsibility of the Contractor to perform Work in accordance with the Contract Documents.
- .5 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defects and irregularities as advised by Consultant at no cost to the Owner. Costs for retesting and

reinspection will be by the General Contractor.

1.5 Access to Work

- .1 Allow inspection/testing agencies access to the Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.6 Procedures

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

1.7 Rejected Work

- .1 Refer to the General Conditions.
- .2 Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which has been rejected by the Consultant as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contracts Documents at no additional cost to the Owner.
- .3 Make good other Contractor's work damaged by such removals or replacements promptly at no additional cost to the Owner.
- .4 If in the opinion of the Consultant it is not expedient to correct defective Work or Work not performed in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the Work performed and that called for by the Contract Documents, the amount of which shall be determined by the Consultant.
- .5 Defective work discovered before expiration of warranty period will be rejected, whether or not it has been previously inspected. If rejected, defective materials or work incorporating defective materials or workmanship shall be promptly removed and replaced or repaired to Consultant's approval, at no cost to Owner.

1.8 Reports

- .1 Inspection and Testing Agency shall provide a written report for each inspection and test made. Provide one copy to the Owner, one copy to the Prime Consultant, one copy to each Sub-Consultant and three copies to the Contractor direct who shall forward one copy to the sub-contractor, supplier or manufacturer concerned.
- .2 Include following information in reports:
 - .1 Date and time of inspection or test.
 - .2 Weather conditions and ambient air temperatures during the inspection.
 - .3 Testing method employed by proper standard reference and specific paragraph or other detailed information as applicable.
 - .4 Inspection description and details and other relevant information.

- .5 Test results in detail, complete with applicable graphs and other clarifying documents and information.
- .6 Printed name and signature of person having conducted inspection or test, and name, title and signature of supervisor having verified the report.

1.9 Tests and Mix Designs

- .1 Furnish test results and mix designs as required of the Specification sections.

1.10 Mockups

- .1 Prepare mock-ups for Work specifically requested in the specifications. Include for Work of all Sections required to provide mock-ups.
- .2 Construct in locations acceptable to the Consultant.
- .3 Prepare mock-up for Consultant review with reasonable promptness and in an orderly sequence, so as not to cause any delay in the Work.
- .4 Failure to prepare mock-up in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 Reviewed and accepted mock-ups will become standards of workmanship and material against which installed work will be verified.
- .6 Remove mock-up at conclusion of Work or when acceptable to Consultant.
- .7 Specification section identifies whether the mock-up may remain as part of the Work or must be removed.

1.11 Equipment and Systems

- .1 General Contractor is responsible for coordinating and scheduling the work of a Testing, Adjusting and Balancing company as appointed by the Owner. Submit adjustment and balancing reports for mechanical and electrical systems.
- .2 Refer to applicable Sections of the Specifications for definitive requirements.

1.12 Tolerances for Installation of Work

- .1 Unless acceptable tolerances are otherwise specified in other Sections specific to the work or are otherwise required for proper functioning of equipment, site services, and Mechanical and Electrical systems, the following shall apply:
 - .1 "Plumb and level" shall mean 1mm in 1 metre.
 - .2 "Square" shall mean not in excess of 10 seconds lesser or greater than 90 degrees.
 - .3 "Straight" shall mean within 1mm under a 1 metre long straightedge.

End of Section

PART 1 - GENERAL

1.1 Site Access

- .1 Access to the project site shall not impact daily vehicle requirements of the school's operations.

1.2 On Site Access Roads and Walks

- .1 Provide for access of emergency vehicles at all times

1.3 Parking

- .1 Provide temporary parking area on site for use of project personnel. Maintain and administer this area as directed.

1.4 Contractor's Site Office

- .1 Provide office within school building, as designated by School Project Manager of appropriate size for office use and project meetings to seat minimum 15 people. Furnish with meeting table and sufficient chairs for meetings.

1.5 Storage Sheds

- .1 Provide adequate weathertight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather. Locate sheds where directed by Consultant.
- .2 The Contractor shall provide adequate protection of materials and work from damage and staining and protect adjacent materials and/or work to prevent damage whether they have been or have not yet been installed. The responsible party shall make good any and/or all damage to satisfaction of Consultant. Subcontractors shall be responsible for all work and materials pertaining to their work.

1.6 Temporary Sanitary Facilities

- .1 A washroom will be made available to Contractor and subcontractors during the period of construction. This contract will be responsible for full washroom cleanup following completion of the work.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.7 Temporary Building Enclosure

- .1 Include in the Work temporary enclosure for building where required to protect it, in its entirety or in its parts, against the elements, to maintain environmental conditions required for work within the enclosure, and to prevent damage to materials stored within.
- .2 Design enclosures that are structurally self-sufficient and that do not overload the building structure. Design enclosures to withstand wind pressures required for the building by jurisdictional authorities.
- .3 Use structural framing of building for support of temporary enclosure framing only upon verification that the load limits of the building frame will not be exceeded.
- .4 Keep surfaces of enclosures free of snow and ice to avoid overloading of building structure.

- .5 Erect enclosures to allow complete accessibility for installation of materials during the time enclosures remain in place.

1.8 Temporary Work Area Enclosure

- .1 Include in the Work temporary dust controls and work area hoarding where required to protect it, in its entirety or in its parts, against work related dust and noise, and to prevent damage to materials stored within work areas as well as school property in adjacent spaces subject to construction dust.
- .2 Design enclosures that are structurally self-sufficient and that do not overload the building structure. Design enclosures to prevent the passage of dust to adjacent spaces either with the use of sealed 13mm plywood sheathing and/or 10 mil poly with acoustical sealant as required.
- .3 Use structural framing of building for support of temporary 38 x 89 wood enclosure framing. .
- .4 Erect enclosures to allow complete accessibility for installation of materials during the time enclosures remain in place.
- .5 Provide temporary chain link fencing, 1.8m high for exterior staging compound as designated on the Site Plan. Discuss limits of compound area with Consultant prior to installation. Review onsite obstructions and school exiting and coordinate accordingly.

1.9 Ventilating

- .1 Pay for costs of ventilation used during construction, including costs of installation, fuel, operation, maintenance and removal of equipment.
- .2 Provide ventilation in enclosed areas as required to:
 - .1 Facilitate progress of work.
 - .2 Protect work and products against dampness and cold.
 - .3 Prevent moisture condensation on surfaces.
 - .4 Provide adequate ventilation to meet health regulations for safe working environment.
- .3 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.
 - .5 Ventilate temporary sanitary facilities.
 - .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .4 Maintain strict supervision of operation of ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.
- .5 Use of permanent system for ventilating will not be permitted, unless Consultant's written permission is obtained stating conditions of use, provisions relating to guarantees on equipment and operation and maintenance of system.

1.10 Scaffolding

- .1 Construct and maintain scaffolding in rigid, secure and safe manner.
- .2 Erect scaffolding independent of walls. Remove promptly when no longer required. Refer to Section 01545 - Safety Requirements for safety requirements for scaffolding.

1.11 Project Security

- .1 Provide and maintain guard lights at all barricade railings, obstructions in the street, road or sidewalks, and at all trenches or pits adjacent to roads or work.
- .2 During construction period, premises shall be securely locked after working hours. Close in doors, windows and all other openings.

1.12 Removal of Temporary Facilities

- .1 Remove temporary facilities from site when directed by Consultant.

End of Section

PART 1 - GENERAL

1.1 Construction Safety Measures

- .1 Observe construction safety measures of National Building Code, Ontario Building Code, Ontario Workers' Compensation Board, Occupational Health and Safety Act and all other federal, provincial and municipal safety codes and regulations provided that in any case of conflict or discrepancy more stringent requirements shall apply.
- .2 The Contractor shall provide competent personnel to implement their safety program and ensure that the standards of the Ontario Health and Safety Act are being complied with.
- .3 The Contractor shall report to the Consultant, Owner and jurisdictional authorities any accident occurring on the building site.

1.2 Overloading

- .1 Ensure no part of Work is subjected to loading that will endanger its safety or will cause permanent deformation.

1.3 Falsework

- .1 Design and construct falsework in accordance with CSA S269.1-1975.

1.4 Scaffolding

- .1 Design and construct scaffolding in accordance with CSA S269.2-M87.

1.5 WHMIS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Canada Labour Code.
- .2 Maintain on site for duration of Contract, a hazardous materials log containing all required material safety data sheets.
- .3 Ensure that workers are instructed in the purpose and content of material safety data sheets.

1.5 MINISTRY OF LABOUR

- .1 Submit Notice of Project Form 0175 to Ministry of Labour prior to commencement of work. Copy of Notice of Project is to be posted at the site. Comply with relevant sections of Construction Regulation 213/91.
- .2 Submit Form 1000 for Registration of Constructors and Employers Engaged in Construction to nearest Ministry of Labour Office. Comply with relevant sections of Construction Regulation 213/91.

1.7 Construction Fence

- .1 The Contractor is required to have the work area fully separated by fencing from the adjacent site as required to secure the work area. Provide lockable gate access to the project site. Fencing shall be erected to the approval of Ministry of Labour inspections.

End of Section

PART 1 - GENERAL

1.1 General

- .1 Comply with requirements of standard for Building Construction Operations FCC No. 301-1982, latest issue, by Fire Commissioner of Canada, available from the office of the Ontario Fire Marshall.
- .2 Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut-off.
 - .3 Left inactive at the end of a working day or shift.
- .3 Fire hydrants, standpipes and hose systems shall not be used for other than fire fighting purposes.

1.2 Fire Extinguishers

- .1 The Contractor shall supply fire extinguishers, necessary to protect, in an emergency, the work in progress and the contractors physical plant on site.
- .2 Extinguishers, generally, are to be 10 lb. capacity ABC type. Provide a minimum of Three (3) units.

1.3 Smoking Restrictions

- .1 Smoking is prohibited on project property.

1.4 Rubbish and Waste Materials

- .1 Rubbish and waste materials are to be kept to a minimum.
- .2 The burning of rubbish is prohibited.
- .3 All rubbish shall be removed from the work areas at the end of the work day or shift or as directed.
- .4 Extreme care is required where it is necessary to store oily waste in work areas to ensure maximum possible cleanliness and safety. Greasy or oily rags or materials subject to spontaneous combustion shall be deposited and kept in an approved receptacle and removed at the end of the work day.

1.5 Flammable Liquids

- .1 The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.

End of Section

PART 1 - GENERAL

1.1 General

- .1 Use new material and equipment unless otherwise specified.
- .2 Products specified by manufacturer's name, brand name or catalogue reference shall be the basis of the bid and shall be supplied for the Work without exception in any detail, subject to allowable substitutions as approved.
- .3 Where several proprietary products are specified, any one of the several will be acceptable.
- .4 For products specified by reference standards, the onus shall be on the supplier to establish that such products meet reference standard requirements. The Consultant may require affidavits from the supplier or inspection and testing at the expense of the supplier, or both, to prove compliance. Products exceeding minimum requirements established by reference standards will be accepted for the Work if such products are compatible with, and harmless to, other products with which they are incorporated.
- .5 Within 7 days of written request by Consultant, submit following information for materials and equipment proposed for supply:
 - .1 Name and address of manufacturer,
 - .2 Trade name, model and catalogue number,
 - .3 Performance, descriptive and test data,
 - .4 Manufacturer's installation or application instructions,
 - .5 Evidence of arrangements to procure.
- .6 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.
- .7 Products delivered to the Project site for incorporation in the work shall be considered the property of the Owner. Maintain protection and security of products stored on the site.

1.2 Manufacturers Instructions

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify Consultant in writing of any conflict between these Specifications and manufacturers instructions. Consultant will designate which document is to be followed.

1.3 Fastenings - General

- .1 Supply fastenings, anchors and accessories required for fabrication and erection of work.
- .2 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work.
- .3 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood plugs not acceptable.
- .4 Conceal fasteners where indicated. Space evenly and lay out neatly.
- .5 Fastenings which cause spalling or cracking are not acceptable.

- .6 Comply with CSA Z166-1975 for use of explosive actuated fastening devices.

1.4 Fastenings - Equipment

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.5 Delivery and Storage

- .1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.
- .2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.
- .3 Store material and equipment in accordance with manufacturer's and supplier's instructions. Store products on site or in storage sheds with secure protection against all harmful environmental conditions.
- .4 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use primer or enamel to match original. Do not paint over name plates.

1.6 Scheduling Of Product Delivery

- .1 Verify that products supplied by all Sections are ordered from suppliers in sufficient time to ensure delivery for incorporation in the Work within the time limits established by approved construction schedule.
- .2 Obtain confirmed delivery dates from product suppliers.
- .3 Immediately inform the Consultant should supplier's confirmation of delivery dates indicate that Project completion may be delayed.
- .4 Submit copies of purchase orders and confirmations of delivery dates for products as may be requested.
- .5 Delivery dates for all major or critical items required during construction and items required in large quantities and over an extended period of time shall be noted in the Construction Schedule specified in Section 01005.

1.7 Defective Products and Work

- .1 Products and installations found defective; not in accordance with the Specifications; or defaced or damaged through negligence of the Contractor, his employees or Subcontractors, or by fire, weather or any other cause will be rejected for incorporation in the Work.
- .2 Remove rejected products and work from the premises immediately.

- .3 Replace rejected products and installations with no delay after rejection. Provide replacement products and execute replacement installations precisely as required by the Specifications for the defective products and installations replaced. Previous inspection and payment shall not relieve the Contractor from the obligation of providing sound and satisfactory products and installations in compliance with the Specifications.

1.8 Substitution

- .1 No substitutions will be permitted without prior written approval of Consultant.
- .2 Proposals for substitution may only be submitted after award of contract. Submit, with request for substitution, documentary evidence that substituted products are equal to, or superior to, specified or otherwise approved products, and a comparison of price and delivery factors for both specified or approved products, and proposed substitute.
- .3 Proposals will be considered by Consultant if:
 - .1 Materials selected by tenderer from those specified, are not available;
 - .2 Delivery date of materials selected from those materials specified would unduly delay completion of contract, or
 - .3 Alternative material to those specified, which are brought to the attention of and considered by Consultant as equivalent to the material specified and will result in a credit to the Contract amount, and
 - .4 Same warranty is provided for substitution as for product and method of installation specified.
- .4 Ensure that substituted products can be both functionally and dimensionally incorporated in the Work with no loss of intended function, performance, space or construction time, and that spare parts and service are readily available.
- .5 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.
- .6 Amounts of all credits arising from approval of substitutions will be determined by Consultant and Contract Price will be reduced accordingly.
- .7 The Contractor shall execute variations, alterations and substitutions which do not affect the contract amount as instructed by the Consultant.

1.9 Workers, Suppliers and Subcontractors

- .1 Assign work only to workers, suppliers, and Subcontractors who have complete knowledge, not only of the conditions of the Specifications, but of jurisdictional requirements, and reference standards and specifications.

1.10 Workmanship

- .1 Unless otherwise specified in a more detailed manner, workmanship shall be of the highest quality recognized by the trade executing the work in accordance with standard practices, by the best methods recommended by the manufacturer of the product, and as acceptable to the Consultant.

End of Section

PART 1 - GENERAL

1.1 Final Inspections and Declaration Procedures

- .1 Contractors Inspection: Contractor and Subcontractors shall conduct an Inspection of the Work, identify deficiencies and defects; repair as required to conform to the Contract Documents. Contractor to document deficiencies being corrected and forward to the Consultant. Notify Consultant in writing of satisfactory completion of Contractor's inspection and that corrections have been made.
- .2 Upon notification of completion of Contractor's inspection, arrange for, conduct, and document a final inspection with the Consultant.
- .3 Above Ceiling Inspection: Consultants, Owner and Contractor will perform an inspection of the Work above ceilings to identify defects or deficiencies. Contractor shall correct the work accordingly:
 - .1 No gypsum board or ceiling tile ceilings are to be installed prior to the following inspections with the exception of tiles with devices and perimeter tiles:
 - .1 Above Ceiling Inspection: performed by the Consultant team.
 - .2 Verification of Above Ceiling Inspection: verify above ceiling deficiencies are 100% complete.
 - .2 Gypsum Board and acoustic tile ceilings can be installed with written Consultant verification to the Owner that deficiencies above ceiling are 100% complete.
 - .3 Substantial Performance Inspection shall not be scheduled until work above ceilings is complete and deficiencies have been deemed complete by the Consultant in writing.
- .4 Further procedures for Contract closeout and takeover at completion of work shall be in accordance with procedures described in OAA/OGCA TAKE-OVER PROCEDURES, OAA/OGCA Document No. 100, November, 1983.

1.2 Submittals

- .1 Provide submittals at Substantial Performance as listed in Section 01 33 00 and OAA/OGCA Document No. 100.

1.3 Equipment Startup

- .1 Arrange for a startup of systems and operating equipment upon the 100% completion of their installation and before applying for Certificate of Substantial Performance. Attendance is required by Consultants, General Contractor, related Subcontractors and manufacturer's representatives.
- .2 Document time, date, people in attendance and results of startup.
- .3 Provide copy of manufacturer's startup reports.
- .4 Submit copies of letters from manufacturers of systems and/or equipment before making application for Certificate of Substantial Performance to verify that the equipment has been installed and connected correctly, and that it is operating in a satisfactory manner. The certification shall be based upon inspection and testing of the equipment by competent technical personnel. Include in letter of certification the names of personnel conducting the

testing and inspection, the methods of inspection utilized, and the location in the building of the equipment certified.

- .5 Following submission of letters of certification and their acceptance by the Owner, the Owner shall have the right to use the equipment on a trial basis and for instructing Owner's personnel in its use.

1.4 Demonstration of Systems and Equipment

- .1 Arrange for a demonstration of systems and operating equipment by Manufacturer. Attendance is required by Consultants, General Contractor, related Subcontractors, Custodial Staff, Health and Safety Representatives and Manufacturer.
- .2 Document time, date, people in attendance and any issues that may develop as a result of the demonstration.
- .3 The demonstrations shall be conducted by the Manufacturer and Subcontractor responsible for the installation of the systems and/or equipment, assisted by representatives of the manufacturer or supplier of the equipment. All personnel conducting the demonstration shall be completely knowledgeable of all conditions of the operating, functioning and maintenance of the systems and/or equipment.
- .4 The Consultant will acknowledge the successful completion of each demonstration.

1.5 Project Completion

- .1 Submit a written certificate that the following items have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents;
 - .2 Defects have been corrected and deficiencies have been completed;
 - .3 Equipment and systems have been tested, adjusted and balanced and are fully operational;
 - .4 Certificates required by the building inspector, fire inspector and utility companies have been submitted;
 - .5 Operation of systems have been demonstrated to Owner's personnel and;
 - .6 Work is complete and ready for final inspection.

1.6 Final Inspection

- .1 When items noted herein are completed, request a final inspection of the Work by the Owner, Consultant and Contractor. If Work is deemed incomplete by the Owner and the Consultants, complete the outstanding items and request a reinspection.
- .2 Outstanding deficiencies will be valued at 150% of normal costs with no value less than \$100. This cost will be used to determine money to be held and must be less than the contractual obligations under the Construction Lien Act for the project to be declared Substantially Performed.

1.7 Declaration of Substantial Performance

- .1 When the Owner and the Consultants consider deficiencies and defects have been corrected

and it appears that requirements of the Contract have been substantially performed, make application for Certificate of Substantial Performance with the following stipulations:

- .1 Contractor is to complete the project within sixty (30) days. Thereafter the Owner may elect to complete the Work and deduct the cost from final payment.
- .2 No payments will be processed between Substantial Performance and Total Performance.

1.8 Declaration of Total Performance

- .1 When the Consultants consider final deficiencies and defects have been corrected and it appears that requirements of the Contract have been totally performed, make application for Total Performance. If Work is deemed incomplete by Consultant, complete outstanding items and request re-inspection.

1.9 Final Payment

- .1 Following the completion of the lien period, submit claim for final payment in accordance with General Conditions.

1.10 Re-inspection

- .1 Should status of the Work require re-inspection by the Consultant due to failure of Work to comply with Contractor's claims for inspections, Owner will deduct amount of Consultant's compensation at current Ontario Association of Architects (OAA) per diem rates.

End of Section

PART 1 - GENERAL

1.1 General

- .1 Maintain project in accordance with the Health and Safety Standards of the Province of Ontario.
- .2 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .3 Store volatile waste in covered metal containers, and remove from premises at end of each working day. Do not dispose of volatile wastes in storm or sanitary drains.
- .4 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

1.2 Materials

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.3 Cleaning During Construction

- .1 Maintain project grounds, and public properties free from accumulations of waste materials and rubbish. Do not allow rubbish to accumulate in work under construction or on roofs.
- .2 Provide on-site containers for collection of waste materials, and rubbish and pay all costs of disposal.
- .3 At reasonable intervals during progress of work, clean site and public property and dispose of waste materials, debris and rubbish.
- .4 Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- .5 Vacuum clean interior building areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until building is ready for substantial completion or occupancy.
- .6 Schedule cleaning operations so that dust or other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- .7 Take precautions to prevent the disposing of mud or debris on roadways. Any and all such mud or debris shall be cleaned up immediately. Neglect of this requirement will cause the Owner to have the necessary clean-up work carried out and charge all costs to the Contractor.
- .8 Cleaning operations shall include those areas used for temporary site access or used on a temporary basis to facilitate the work.
- .9 Be responsible for removal of snow, for all trades, from all areas of site and site access roads as required to permit continuous, uninterrupted work on site.

1.4 Final Cleaning

- .1 Upon completion of the Work, prior to Substantial Performance or where Work is phased, upon completion of each phase, commence final cleaning of the area.
- .2 Clean the Place of the Work thoroughly, free of rubbish and surplus material. Dispose of rubbish and debris. Vacate the Place of the Work in a clean and tidy condition satisfactory to the Consultant. Note that final cleaning is intended to allow the Owner to occupy the Work without

- being required to do any further cleaning.
- .3 Dismantle and remove the work of the Temporary Facilities Section from the Place of the Work.
 - .4 Clean all new components within the Place of the Work including, without being limited to:
 - .1 Floors: sweep / vacuum, wash, wax, polish
 - .2 Walls: vacuum / dust / wet wash / dry wipe
 - .3 Ceilings: vacuum
 - .4 Window coverings: wet wash / wipe and vacuum
 - .5 Electrical switch gear: vacuum / wipe
 - .6 Windows, screens, mirrors, door glazing: dust, polish inside and outside, and replace all damaged glass
 - .7 Hardware: dust and polish clean
 - .8 Plumbing fixtures, mechanical and electrical fixtures and equipment: remove stains, dust dirt and paint spots
 - .9 Stainless steel, anodized aluminum, brass, bronze and other metals: dust and polish clean
 - .10 Use manufacturers' recommended cleaning products for each product provided in the Work.
 - .11 Remove stains, efflorescence, paint, plaster, labels, temporary coverings and protection, caulking compounds and dirt.
 - .12 Touch up damaged painted areas.
 - .13 Dust, clean and polish metal and glass surfaces.
 - .14 Clean millwork on all surfaces inside and out.
 - .15 Dirty and damaged ceiling tiles to be replaced with new.
 - .16 For vinyl and VCT floors, damp mop entire floor area, remove dust and construction marks prior to sealing. Apply 2 coats 'Swish Tuf Seal' floor sealer and 2 wax coats of 'Swish Rite On 18% Floor Finish' in accordance with product manufacturers' instructions. Baseboards are not to be waxed. When applying the floor wax there must be clearance of one inch +/-, within reasonable tolerance, from the baseboard and wall.
 - .17 Provide final vacuuming of carpets. Ensure that carpets are free of stains, tears and / or other blemishes. Carpets that show signs of stains and dirt upon completion of vacuuming must be further cleaned by steam cleaning.
 - .18 Clean inside of ducts, blowers and coils and behind grilles, louvers and screens.
 - .19 Replace construction filters for heating, ventilation and air conditioning equipment with new filters.
 - .20 Ceramic or porcelain tile is to be scrubbed so that all dirt, debris, stains and marks are removed. Grout is to be sealed.
 - .21 Power wash new and adjacent existing pavement roads and sidewalk surfaces.
 - .5 Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
 - .6 Clean wall mounted presentation boards, whiteboards, chalkboards and tackboard surfaces, including top and bottom rails.
 - .7 Replace dirty and damaged ceiling tiles with new tiles.

- .8 Clean window coverings of dust, stains, and other construction dirt. Window coverings shall operate smoothly to supplier and/or manufacturer's approval.
- .9 Vacuum clean all building interiors affected in construction operations including ceilings and walls. Wet wash and wipe down all surfaces to remove dust as required.
- .10 Ceramic and porcelain floors are to be sealed in accordance with manufacturer's recommendations. Tile grout is to be sealed.
- .11 Carpets are to be vacuumed, free of stains, blemishes or damaged areas. Carpets are to be steam cleaned where vacuuming cannot provide adequate cleaning for takeover.
- .12 Broom clean and wash paved surfaces inside and outside the building.
- .13 Remove debris and materials from roof areas.
- .14 Remove snow and ice from sidewalks, driveways and parking areas.
- .15 Clean out shafts and pits.
- .16 Vacuum out and wipe clean all electrical and signal and security panels, switchboards, transformers and other electrical equipment.
- .17 Remove labels, temporary wrappings and coverings, and protective materials from all surfaces.
- .18 Replace ventilating and air conditioning filters.
- .19 Clean ducts, blowers and coils. Where HVAC equipment has been approved for pre-turnover use, all ducts shall be cleaned by approved commercial duct cleaner and filters replace prior to turnover.
- .20 Clean out floor and roof drains. Verify that they are clean and free-draining.
- .21 Power wash exterior asphalt paving and concrete walkways. Extend cleaning to areas of existing roadways or walkways affected by new construction.
- .22 Leave premises ready for immediate occupation without further cleaning, to Consultant's and Owner's approval.

End of Section

PART 1 - GENERAL

1.1 Operations and Maintenance Manual

- .1 An organized compilation of operating and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems as specified in individual Sections of Divisions 02 - 17.

1.2 General

- .1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual.
- .2 Submit complete operation and maintenance manual to Consultant prior to application for Certificate of Substantial Performance. For mechanical, electrical and other equipment that is specified to be demonstrated to Owner's staff and maintenance personnel, the submission time shall be a minimum of 14 working days before date of Substantial Performance. Where an Air Balancing Report is called for under Division 15, it shall be noted that failure to provide such report before the 14 day period specified above may be held as a reason by the Consultant, to delay Substantial Performance inspection.
- .3 Submit 2 copies.
- .4 Organize data into same numerical order as contract specifications.
- .5 Material: label each section with tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .6 Type lists and notes.
- .7 Drawings, diagrams and manufacturers literature must be legible.

1.3 Binders

- .1 Binders: vinyl, hard covered, 2 "D" ring, loose leaf, sized for 8 1/2" x 11" paper.
- .2 Identify contents of each binder on spline and cover.

1.4 Contents

- .1 Cover sheet containing:
 - .1 Date submitted.
 - .2 Project title, location and project number.
 - .3 Names and addresses of Contractor, and all Sub-contractors.
- .2 Table of Contents.
- .3 Warranties, guarantees.
- .4 Copies of approvals, and certificates including Occupancy Certificate, Hydro Certificate, Fire Alarm Verification and sprinkler verification.
- .5 Provide data as specified in individual Sections of Divisions 02 to 17. Organize data into applicable Sections of work with each Section separated by hard paper dividers with plastic covered tabs marked by Section.
 - .1 List of equipment including service depot.
 - .2 Nameplate information including equipment number, make, size, capacity, model number and serial number.

- .3 Parts list.
 - .4 Installation details.
 - .5 Comprehensive operating instructions.
 - .6 Detailed maintenance instructions for equipment.
 - .7 Detailed maintenance instructions for finishes.
 - .8 Sources of supply for all proprietary products used in Work.
 - .9 Sources of supply for parts and maintenance of all equipment in Project.
- .6 Finish Hardware Schedule.
- .7 Paint schedule including colour numbers, locations where applied, list of manufacturers and trade names of finishes and coatings applied.
- .8 Shop drawings: bind separately one complete set of reviewed final shop drawings and product data. Record any changes made during fabrication and installation caused by unforeseen conditions.
- .9 Reports, charts and diagrams specified in Divisions 15, 16 and 17, including Air Balancing Reports and control systems wiring diagrams.

1.5 Maintenance Materials

- .1 Specific requirements for maintenance materials are specified in individual Sections of Divisions 02 to 17.
- .2 Deliver specified items packaged to prevent damage. Store where directed by Consultant.
- .3 Identify, on carton or package, colour, room No., system or area as applicable where item is used.

1.6 Special Tools

- .1 Specific requirements for special tools are specified in individual Sections of Divisions 02 to 17.
- .2 Assemble special tools as specified. Deliver to site and store where directed by Consultant.
- .3 Include following:
 - .1 Identification tag reference.
 - .2 Identification of equipment or system for which tools are applicable.
 - .3 Instruction on intended use of tool.
- .4 Identify special tools to indicate equipment or system for which tools are intended.

1.7 Spare Parts

- .1 Specific requirements for spare parts are specified in individual Sections of Divisions 02 to 17.
- .2 Assemble spare parts as specified. Deliver to Site and store where directed by Consultant.
- .3 Include the following:
 - .1 Part number.
 - .2 Identification of equipment or system for which parts are applicable.
 - .3 Installation instructions as applicable.
 - .4 Name and address of nearest supplier.
- .4 Identify spare parts to indicate equipment or system for which parts are applicable.

End of Section

PART 1 - GENERAL

1.1 General

- .1 Standard one year warranty, shall start at date of Substantial Performance of the Contract as stated in the General Conditions of the Contract. Ensure that all warranties comply with this stipulation prior to submission of same.
- .2 Owner shall promptly give written notice to the Contractor (with copy to the Consultant) of any defects or deficiencies noted during warranty period. Contractor shall promptly correct, at his own expense, such defects or deficiencies to the satisfaction of the Consultant.
- .3 During month prior to end of standard one year warranty period, Owner, Consultant and Contractor, will conduct an inspection of the project and Contractor shall promptly remedy any defects or deficiencies due to faulty materials or workmanship.
- .4 Provide extended warranties specified in various Sections of the Specifications and/or specified in this Section.
- .5 Submit each extended warranty in an approved uniform format. A sample of the required format is included in this Section.
- .6 Warranties are to be submitted through the General Contractor.
- .7 If validity of extended warranties is related to proper maintenance and servicing of equipment, and similar procedures, full details must be provided in the Operations and Maintenance Manual.

1.2 Extended Warranties

- .1 The following required written extended warranties shall cover defects or deficiencies due to faulty materials, fabrication or installation which become evident prior to and during the periods indicated below:
 - a) Section 02 51 10 Asphalt Paving two years
 - b) Section 07 62 00 Sheet Metal and Flashing five years
 - c) Section 07 51 13 Built-up Bituminous Roofing ten years
 - d) Section 07 90 00 Sealants five years
 - e) Section 08 12 00 Aluminum Doors and Frames ten years
 - f) Section 08 52 10 Aluminum Windows ten years
 - g) Section 08 71 00 Finish Hardware as per Section 08 71 00
 - h) Section 08 80 00 Glazing ten years

End of Section

1 Summary

- .1 This Section includes the general design and performance requirements for the work of Sections which comprise the building envelope including but not limited to masonry, metal stud exterior wall system, exterior cladding systems, windows, entrances and roofing, including mechanical penthouse roof and accessible roofs.

2 Design - General

- .1 Comply with the applicable building code, and other regulations and requirements of authorities having jurisdiction, in the design, engineering, fabrication and installation of the Work.
- .2 Accommodate the tolerance limitations of the structure, and the creep, deflection and other movements of the structure.
- .3 Design building envelope assemblies to provide for expansion and contraction of components as will be caused by the ambient temperature range and surface temperature variation of components, and structural movements, without causing distortion, failure of joint and air/vapour barrier seals, undue stress or other defects detrimental to appearance or performance.
- .4 Design building envelope assemblies to withstand within acceptable deflection limitations, their own weight, erection loads, forces applied by the movements of the building structure and attached adjacent components, and the maximum design loads due to snow, ice, rain, hail, seismic, and the pressure and suction of wind and any other loads and forces affecting any part of the system.
- .5 The Work shall accommodate, by means of expansion and contraction provisions, any movements in the building envelope assemblies themselves and between the assemblies and the building structure, caused by structural movements, both deflection and racking; and/or thermal expansion and contraction, without distortion, damage, misalignment of joints, breakage of air/vapour barriers, water and air penetration through the assembly, or glass breakage.
- .6 The Work shall have a method of attachment to the structure which shall take into account site peculiarities so that there shall be no possibility of site and air vibrations or normal temperature movements of the building to loosen, weaken and/or fracture the connection between building envelope assembly components and the structure or between the components themselves.
- .7 Reinforce building envelope assembly components, as required, so that the members can safely sustain design loads.
- .8 Design light gauge steel structural members in accordance with CSA-S136.
- .9 Design light gauge aluminum structural members in accordance with CAN3-S157.
- .10 Design, construct and secure assemblies in manner which will keep stresses on sealants within the sealant manufacturer's recommended working range.
- .11 In the design of the structural framework of the building, assumptions have been made as to the magnitude, direction and points of application of the loads imposed on the structure by the building envelope assemblies. Do not incorporate, without the approval of the Consultant, details which invalidate the structure design assumptions. Resulting alterations required to the structure shall be the responsibility of the Contractor. This information is available from the Consultant upon request.

3 Design – Rain Screen Principle

- .1 Base the design of building envelope assemblies on the "Rain Screen" principle.
- .2 The definition of the rain screen principle for the purpose of these Specifications is "as advocated by the National Research Council of Canada". Voids between the assembly components as well as those between components and the structure shall have:
 - .1 Gaskets, baffles, overlaps, seals and compartmentalization as required to provide a rain barrier to effectively prevent excessive rain water entry into any of the building envelope cavities but allow pressure equalization of cavity air spaces based on the rain screen principle.
 - .2 Low permeability vapour barriers to minimize vapour diffusion.
 - .3 Air barriers and seals as required to prevent the entry of interior building air into building envelope cavities, and exterior air into the building. Air barriers and seals shall be able to withstand wind design pressures.
- .3 Such provisions shall be in the form of openings between cavities and the building exterior of sufficient cross sections to provide adequate pressure equalization. All openings shall be effectively baffled against direct rain water entry. Air spaces shall be baffled and compartmentalized to prevent chimney effect and other differential pressures within the air spaces for each storey vertically and also horizontally.
- .4 Thermal separators, isolators and seals placed to eliminate contact between interior humid air and a cold surface or structural component to prevent condensation and ice build-up on such surfaces during cold weather.

4 Design Conditions

- .1 Winter:
 - .1 Inside: in air conditioned spaces:
 - .2 Maximum 22.20C (720F) plus/minus 10C (20F);
 - .3 Min heated non-air conditioned spaces;
 - .4 20C plus/minus 10C;
 - .5 Outside: minus 20.60C (-50F) at 16.1 km/h (10 mph).
- .2 Summer:
 - .1 Inside: in air conditioned spaces:
 - .2 23.30C plus/minus 10C;
 - .3 Outside: 310C db/240C wb (880F db/750F wb).

5 Design Numerical Values

- .1 Numerical values required except where otherwise specified or approved, shall be as determined by the test procedures or standards listed below:
 - .1 Water absorption: ASTM C272
 - .2 Linear thermal coefficient: ASTM D696
 - .3 Water vapour transmission: ASTM E96
 - .4 Thermal conductivity: ASTM C177
 - .5 Permeability: ASTM E96 Procedure E
 - .6 Resistance to permanent set: ASTM A395 Method B
 - .7 Elongation: ASTM D412
 - .8 Ozone resistance: ASTM D1149

- .9 Tensile strength: ASTM D412
- .10 Hardness (Shore A): ASTM D2240
- .11 Surface burning characteristics: CAN/ULC-S102
- .12 Combustibility: CAN/ULC-S114

6 Design Pressures

- .1 Wind Load: Provide uniform design based on the more stringent of the maximum wind loading pressures for suction, impact and gusting of the applicable building code, with a return period probability of one year of any ten (10) years, except where greater requirements are required by FM Global data sheet 1-28.
- .2 Air Supply: Outside air shall be supplied at the rate of 0.846 l/s/m² (0.1666 cfm per ft²).

7 Design - Air

- .1 Air infiltration and exfiltration through the entire completed cladding systems shall not exceed 0.02 litre/sec/m² at 300 Pa static pressure difference, except where greater requirements are specified.

8 Design - Water, Vapour and Moisture

- .1 Comply with the design and performance requirements specified in the applicable building code, and as specified herein, and design and engineer the Work accordingly. In designing and engineering the Work, the following principles shall be followed:
- .2 Make provisions to drain to the exterior face of the assembly, any water entering at joints and any condensation occurring within the building envelope assembly.
- .3 Design, fabricate and install the assembly to be watertight to the interior under the interior and exterior design conditions in combination with movements occurring due to loads imposed.
- .4 Under full design conditions and pressures no water penetration to the building interior side of the assembly shall occur.
- .5 The requirements for an air barrier and a vapour barrier are intended to be provided at the same plane in the building envelope design unless otherwise indicated or specified. In such cases, the Drawings and Specifications refer to "air/vapour barrier". The definition of the air/vapour barrier for the purpose of these Specifications is "a continuous membrane including joints of membrane between components and to adjacent construction which prevents or retards penetration of moisture laden air and the diffusion of water vapour through it".
- .6 The maximum water vapour transmission of components forming the vapour barrier shall be 3.0 ng/ (Pa x s x m²); (0.05 Imperial Perms) unless specified otherwise.
- .7 At design conditions no condensation shall occur on room side surfaces.

9 Submittals

- .1 Sealant Certification: Submit a signed certificate from the sealant manufacturers prior to the commencement of this work which states:
 - .1 Surface preparation requirements;
 - .2 Priming and application procedures;
 - .3 Verification that proper joint backing material is selected;

- .4 Verification that sealant materials are selected for use from those specified;
- .5 Verification that sealants are suitable for purposes intended and joint designs;
- .6 Verification that sealants are compatible with other materials and products with which they come in contact, including but not limited to sealants provided under other Sections, insulation adhesives, bitumens, air and vapour barriers, waterproofing, metals and metal finishes, masonry and exterior insulation and finish system;
- .7 Verification that sealants will not stain the substrates;
- .8 Verification that sealant is suitable for temperature, humidity and weather conditions at the time of application.

10 Quality Assurance – Quality Control

- .1 Connections and special prefabricated inserts may be required by the Consultant to be tested as part of the Work. Cost of testing as required will be paid by Owner.

11 Materials

- .1 Sealants: Sealants used for the various building envelope assemblies shall be selected from those specified in the respective assembly Section, and shall be coordinated with the sealant being provided under other building envelope Sections. Preferably, one sealant of the same manufacture shall be used throughout. If different sealants are selected from those specified, it is the responsibility of the respective Section to ensure compatibility between selected sealant, substrates, and sealants of other Sections which come in contact with the selected sealant.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Division 01 – General Requirements

1.2 References

- .1 Canadian Standards Association (CSA).
- .2 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.

1.3 Existing Conditions

- .1 Structures to be demolished to be based on condition at time of examination prior to tendering.
- .2 Remove, protect and store salvaged items as directed by Consultant.

1.4 Protection

- .1 Prevent movement, settlement or damage of adjacent structures, services, paving and walks, parts of existing building to remain. Provide bracing, shoring and underpinning as required. Repair damage caused by demolition as directed by Consultant.
- 2 Support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered, cease operations and notify Consultant.
- .3 Prevent debris from blocking surface drainage system, mechanical and electrical systems which must remain in operation.

1.5 Requirements of Regulatory Agencies

- .1 Conform to the Ontario Building Code, to by-laws of municipality, and to all requirements of provincial authorities having jurisdiction.
- .2 Put in place all safety measures such as hoarding, fencing, signage, garbage bins, and perform all disconnect removal and capping-off work for existing hydro, water, gas, telephone, cable TV, computer feeds, etc. as required by Engineer, Municipal, Provincial, and Utility Authorities having jurisdiction. Maintain all required exists during demolition to approval of local authorities.

1.6 Quality Assurance

- .1 Disconnection, sealing off, demolition and alternations to existing mechanical/electrical services and equipment shall be performed by properly qualified and experienced Mechanical/Electrical Sub-Contractors. Co-ordinate with Mechanical/Electrical Sub-Contractors and with DCC Representative to schedule all necessary disconnects/capping-off of existing services to allow demolition work to proceed. Take special care to protect existing active services during demolition.
- .2 Demolition/removal/relocation work shall be executed with utmost care to prevent damage to adjacent materials and finishes that are to be maintained or to items being removed and relocated or turned over to School Representative. Make good, at no additional cost to Owner, any damage caused by failure to exercise care and protection

PART 2 – PRODUCTS

2.1 Scope of Work

- .1 Supply all labour, materials and equipment necessary to perform all demolition/removal/relocation work. Refer carefully to issued drawings for notes and symbols indicating general extent of this type of work.

PART 3 - EXECUTION

3.1 Preparation

- .1 Disconnect and re-route electrical and telephone service lines within buildings affected by demolition work. Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
- .2 Disconnect and cap designated mechanical services.
- .3 Do not disrupt active or energized utilities traversing premises designated to remain undisturbed.

3.2 Safety Code

- .1 Do demolition work in accordance with Section 01545 – Safety Requirements.

3.3 Demolition

- .1 Demolish parts of building structure to permit construction of new work as indicated on drawings.
- .3 Demolish foundation walls and footings, and concrete floors below or on grade within areas of building to accommodate new construction.
- .4 Insulation Batts, steel studs and clips in good condition are to be stockpiled on site and left for reuse in new construction.
- .5 Notify Engineer Consultant in writing of any materials identified as not suitable for alternate disposal. Provide reasons prior to approval for disposal.
- .6 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.
- .7 At end of each day's work, leave work in safe and stable condition. Protect interiors of parts not to be demolished from exterior elements at all times.
- .8 Demolish to minimize dusting. Keep materials wetted as required to minimize airborne dust.
- .9 Demolish masonry and concrete walls in areas affected by new work. Remove masonry walls to 100mm below concrete floor slab to allow concrete floor patch to level floor for new flooring.
- .10 Remove structural steel framing and/or aluminum framed glazing as required for new work.
- .11 Remove and dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.

3.4 Dust Control

- .1 The Contractor shall assume full responsibility for protection of existing portions of building assemblies, materials, and finishes to be maintained so that they are not damaged by demolition / removal / relocation work.
- .2 Provide temporary dust proofing by means of partitions, filters, coverings, flexible screenings and tape to effectively isolate existing materials/finishes/equipment. Such measures shall be in place prior to commencement of any demolition work. Openings in existing floors, walls and ceilings shall be covered and taped to prevent dust migration. Existing return air grilles leading from areas being demolished shall be equipped with temporary filters and cleaned or replaced on regular basis. Include all costs for erection and removal of such protective devices. Remove such devices immediately upon completion of demolition work.

3.5 ACM Report

- .1 A copy of the current ACM Report follows this Section as a reference to school ACM survey. This report must be reviewed prior to demolition or new work affecting existing wall, ceiling or floor surfaces. Notify the School Board immediately where ACM is suspected within the scope of this Contract work regardless of the survey's data.

End of Section



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Custodial Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 100 | Floor Area: 2 sq. m. (21.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | 75% 25% | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling Drywall | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|--|---|-----------------------------------|
| Level: 1 | Usage: General Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 101 | Floor Area: 87 sq. m (936.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Principal's Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 101A | Floor Area: 14 sq. m (150.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: VP's Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 101B | Floor Area: 14 sq. m. (150.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 101C | Floor Area: 17 sq. m. (183.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Staff Washroom | Consultant: DCS | |
| Room/Area: 101D | Floor Area: 4 sq. m. (43.1 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling Drywall | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Guidance Resource Area | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 102 | Floor Area: 44 sq. m. (473.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | 75% 25% | | | |
| Floor 12"x12" Vinyl Tile Carpet | None Detected | 50% 50% | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Guidance Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 102A | Floor Area: 7 sq. m. (75.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Guidance Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 102B | Floor Area: 7 sq. m. (75.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|---------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Guidance Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 102C | Floor Area: 10 sq. m. (107.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Academic Storage Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 102D | Floor Area: 9 sq. m. (96.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | 75% 25% | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Breakout Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 103 | Floor Area: 20 sq. m. (215.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|---|--------------------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | 50% 50% | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile Drywall | None Detected None Detected | 75% 25% | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 103A | Floor Area: 13 sq. m. (139.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling Drywall | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Sensory Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 103B | Floor Area: 3 sq. m. (32.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling Drywall | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Breakout Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 103C | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Breakout Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 103D | Floor Area: 13 sq. m. (139.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Note: Area originally surveyed as Room 105D.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Custodial Storage/Slop Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 104 | Floor Area: 16 sq. m. (172.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|-------------------------------------|-----------------------|---------------------------|----------------------------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile 9"x9" Vinyl Tile | 6.7% Chrysotile Assumed Asbestos | 75% 25% | 10 to 50 sq m <10 sq m | Non-Friable Non-Friable | B B |
| Ceiling 12"x12" Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Asbestos-containing 12"x12" vinyl floor tiles. Assumed asbestos-containing 9"x9" vinyl floor tiles. |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Library | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 105 | Floor Area: 82 sq. m. (882.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile Carpet | None Detected | 25% 75% | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Library Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 105A | Floor Area: 9 sq. m. (96.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Library Work Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 105B | Floor Area: 10 sq. m. (107.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Library Seminar Room | Consultant: DCS | |
| Room/Area: 105C | Floor Area: 18 sq. m. (193.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | 75% 25% | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Girls' Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 106 | Floor Area: 14 sq. m (150.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|---|-----------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical Medium (10-20 cm) fittings | 70% to 80% Chrysotile | Above Ceiling | <5 pipe fittings | Friable | C (concealed) |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Asbestos-containing insulation on pipe fittings above ceiling over block wall. |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Drafting/AutoCAD | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 107 | Floor Area: 45 sq. m. (484.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 107A | Floor Area: 15 sq. m. (161.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Social Skills Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 108 | Floor Area: 96 sq. m. (1033.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Calming Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 108A | Floor Area: 5.9 sq. m. (63.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Life Skills Classroom | Consultant: DCS | |
| Room/Area: 108B | Floor Area: 21 sq. m. (226.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Special Needs Washroom | Consultant: DCS | |
| Room/Area: 108C | Floor Area: 15.3 sq. m. (164.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Ceramic Tile Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling Drywall | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Drafting/AutoCAD | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 109 | Floor Area: 81.8 sq. m. (880.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Greenhouse | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 109A | Floor Area: 80 sq. m. (861.1 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (2014). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Staff Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 110 | Floor Area: 67.6 sq. m. (727.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Staff Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 110A | Floor Area: 2 sq. m. (21.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling Drywall | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Servery | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 110B | Floor Area: 13.4 sq. m. (144.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Woodworking | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 111 | Floor Area: 150 sq. m. (1614.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Staff Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 112 | Floor Area: 3.9 sq. m. (42.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of Constuction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Boys' Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 113 | Floor Area: 18 sq. m (193.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Custodial Storage | Consultant: DCS | |
| Room/Area: 114 | Floor Area: 45 sq. m. (484.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Slop Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 114A | Floor Area: 10 sq. m. (107.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|-----------------------------|---|-----------------------------------|
| Level: 1 | Usage: Elevator Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 114B | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Cafeteria | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 115 | Floor Area: 106 sq. m (1141.0 sq. ft) | Most Recent Survey: Apr 25, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--------------------------------|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor Concrete | | | | | |
| Ceiling 12"x12" Tile | 11% Amosite | All | >100 sq m | Non-Friable | C (exposed) |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Asbestos-containing acoustic ceiling tiles. |
|-------------------------------|---|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|------------------------------|---|-----------------------------------|
| Level: 1 | Usage: Staff Workroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 116 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Servery | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 117 | Floor Area: 8 sq. m. (86.1 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Kitchen | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 117A | Floor Area: 8 sq. m. (86.1 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Kitchen | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 117B | Floor Area: 29 sq. m. (312.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Storage Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 117C | Floor Area: 7 sq. m. (75.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Note: Area originally surveyed as Room 117D.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|-------------------------|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 118 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Slop Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 119 | Floor Area: 3 sq. m. (32.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Mechanical Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 120 | Floor Area: 55 sq. m (592.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Concrete | | | | | |
| Ceiling Plaster | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Mechanical Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 120A | Floor Area: 51 sq. m. (549.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Concrete | | | | | |
| Ceiling Plaster | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Electrical Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 120B | Floor Area: 22 sq. m (236.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Concrete | | | | | |
| Ceiling Plaster | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Family Studies Cooking | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 121 | Floor Area: 77.3 sq. m. (832.1 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Family Studies Cooking | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 121A | Floor Area: 19 sq. m. (204.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Family Studies Cooking | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 121B | Floor Area: 19 sq. m. (204.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Custodial Lunch Room | Consultant: DCS | |
| Room/Area: 122 | Floor Area: 41.6 sq. m. (447.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | 6.8% Chrysotile | All | 10 to 50 sq m | Non-Friable | B |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Asbestos-containing vinyl floor tiles. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Custodial Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 122A | Floor Area: 8.2 sq. m. (88.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall Masonry | None Detected | | | | |
| Floor Carpet | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes:</p> <p>No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> <p>Note: Area originally surveyed as Room 122B.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Elevator Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 124 | Floor Area: 35 sq. m. (376.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | 6.7% Chrysotile | All | 10 to 50 sq m | Non-Friable | A |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: Asbestos-containing vinyl floor tiles. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Outdoor Equipment Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 126 | Floor Area: 20 sq. m. (215.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed, contact Facility Services. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Boys' Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 126A | Floor Area: 20 sq. m (215.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling Drywall | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Drywall joint compound not sampled due to installation date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Gymnasium | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128 | Floor Area: 490 sq. m. (5274.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Wood | | | | | |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128A | Floor Area: 20 sq. m. (215.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|----------------------------------|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor 9"x9" Vinyl Tile | Assumed Asbestos | All | 10 to 50 sq m | Non-Friable | A |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Assumed asbestos-containing vinyl floor tiles. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Gym Storage Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128B | Floor Area: 12 sq. m. (129.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling Drywall | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Drywall joint compound not sampled due to installation date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Gym Storage Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128C | Floor Area: 19 sq. m. (204.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|----------------------------------|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor 9"x9" Vinyl Tile | Assumed Asbestos | All | 10 to 50 sq m | Non-Friable | A |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Assumed asbestos-containing vinyl floor tiles. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Gym Storage Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128D | Floor Area: 12 sq. m. (129.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling Drywall | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Drywall joint compound not sampled due to installation date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Permanent Stage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128E | Floor Area: 88 sq. m. (947.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Wood | | | | | |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Prop Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128F | Floor Area: 21.5 sq. m. (231.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|--|
| Content Notes: | Inspection Notes: Area not surveyed. Contact Facility Services for more information. |
|-------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Vestibule | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 128G | Floor Area: 14.9 sq. m. (160.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor 9"x9" Vinyl Tile | Assumed Asbestos | All | 10 to 50 sq m | Non-Friable | A |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|--|
| Content Notes: | Inspection Notes: Assumed asbestos-containing vinyl floor tiles. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Boys' Change Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 130 | Floor Area: 48 sq. m. (516.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Ceramic Tile Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling Drywall | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Drywall joint compound not sampled due to installation date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Girls' Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 132 | Floor Area: 17 sq. m. (183.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling Drywall | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Drywall joint compound not sampled due to installation date (post-1990). |
|-------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



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Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Girls' Change Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 132A | Floor Area: 56 sq. m. (602.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Ceramic Tile Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling Drywall | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Drywall joint compound not sampled due to installation date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Instrumental Music Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 134 | Floor Area: 66 sq. m. (710.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|----------------------------------|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry Tectum | | 75% 25% | | | |
| Floor Carpet | | | | | |
| Ceiling 12"x12" Tile | 8% Amosite | All | 50 to 100 sq m | Non-Friable | C (exposed) |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Vinyl flooring may be present under carpet. Asbestos-containing acoustic ceiling tiles. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Program Related Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 134A | Floor Area: 9 sq. m. (96.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--------------------------------|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor Carpet | | | | | |
| Ceiling 12"x12" Tile | 8% Amosite | All | <10 sq m | Non-Friable | C (exposed) |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Vinyl flooring may be present under carpet. Asbestos-containing acoustic ceiling tiles. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Practice Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 134B | Floor Area: 7 sq. m. (75.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Tectum | | | | | |
| Floor Carpet | | | | | |
| Ceiling Tectum | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 134C | Floor Area: 7 sq. m. (75.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Tectum | | | | | |
| Floor Carpet | | | | | |
| Ceiling Tectum | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Practice Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 134D | Floor Area: 7 sq. m (75.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Tectum | | | | | |
| Floor Carpet | | | | | |
| Ceiling Tectum | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl flooring may be present under carpet. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Program Related Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 134E | Floor Area: 9 sq. m. (96.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--------------------------------|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor Carpet | | | | | |
| Ceiling 12"x12" Tile | 8% Amosite | All | <10 sq m | Non-Friable | C (exposed) |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Vinyl flooring may be present under carpet. Asbestos-containing acoustic ceiling tiles. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Outdoor Equipment Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 135 | Floor Area: 30 sq. m. (322.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed, contact Facility Services. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Outdoor Equipment Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 136 | Floor Area: 30 sq. m. (322.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed, contact Facility Services. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Corridor (Between Room 101C & Ro | Consultant: DCS | |
| Room/Area: C101 | Floor Area: 293.6 sq. m. (3160.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|---|------------------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile Drywall | Not Sampled None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). NOTE: Area originally surveyed as COR-2 and COR-3.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Corridor (Between C101 & E3) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C102 | Floor Area: 115.7 sq. m. (1245.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Corridor (Between C101 & C104) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C103 | Floor Area: 29 sq. m. (312.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|---|------------------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile Drywall | Not Sampled None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Note: Area originally surveyed as part of COR-3.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Corridor (Between C103 & E7) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C104 | Floor Area: 388.3 sq. m. (4179.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|---|--------------------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry Plaster Wood | None Detected | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile Texture Spray | Not Sampled 0.5% Chrysotile | All | >100 sq m | Friable | C (exposed) |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Asbestos-containing spray-applied acoustic finish (texture) on ceiling. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Note: Area originally surveyed as LOB. 1 and COR-4. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|--|---|-----------------------------------|
| Level: 1 | Usage: Corridor (Between Room 124 & Room 125) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C105 | Floor Area: 40.3 sq. m. (433.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Note: Area originally surveyed as Room 126.</p> |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Corridor (Between C101 & E11) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C106 | Floor Area: 118.8 sq. m. (1278.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes:</p> <p>No asbestos-containing materials observed. No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> <p>Note: Area originally surveyed as COR-1.</p> |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E1 | Floor Area: 83.6 sq. m. (899.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|---|--------------------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 12"x12" Tile Drywall | None Detected None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. NOTE: Includes former S1 from 1st and 2nd floor.</p> |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E10 | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes:</p> <p>No asbestos-containing materials observed. No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> <p>Note: Area originally surveyed as part of C106.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | |
| Room/Area: E11 | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed, contact Facility Services. |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E12 | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes:</p> <p>No asbestos-containing materials observed. No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> <p>Note: Area originally surveyed as part of C106.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | |
| Room/Area: E2 | Floor Area: 4 sq. m. (43.1 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor 12"x12" Vinyl Tile Carpet | None Detected | 25% 75% | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes:</p> <p>No asbestos-containing materials observed. Vinyl flooring may be present under carpet. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> <p>Note: Area originally surveyed as part of Room 105.</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E3 | Floor Area: 49 sq. m. (527.4 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 12"x12" Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|----------------------|--------------------|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E5 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Glass | Not Sampled | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: Area not surveyed as they are simple glass structures with no texture coat. |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|----------------------|--------------------|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E6 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed as they are simple glass structures with no texture coat. |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | |
| Room/Area: E7 | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Terrazzo | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E8 | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Wood | | | | | |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Note: Area originally surveyed as part of Room 128.</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|----------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Exit | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: E9 | Floor Area: 5 sq. m. (53.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Wood | | | | | |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Note: Area originally surveyed as part of Room 128.</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P660 | Floor Area: 71 sq. m. (764.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P661 | Floor Area: 71 sq. m. (764.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls.</p> |
|------------------------------|--|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P662 | Floor Area: 71 sq. m. (764.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P663 | Floor Area: 71 sq. m. (764.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls.</p> |
|------------------------------|--|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P664 | Floor Area: 71 sq. m. (764.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P664A | Floor Area: 17 sq. m. (183.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls. |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P665 | Floor Area: 71 sq. m. (764.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-------------------------|---|---|-----------------------------------|
| Level: 1 | Usage: Misc. Office | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: P665A | Floor Area: 17 sq. m. (183.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Vinyl-Covered Drywall | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | None Detected | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed.No drywall joint compound anticipated to be present on vinyl-covered drywall applied to walls.</p> |
|------------------------------|--|

Accessibility
A - Areas of the building within reach (from floor level) of all building users.
B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 201 | Floor Area: 68 sq. m (731.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 202 | Floor Area: 68 sq. m (731.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 203 | Floor Area: 68 sq. m (731.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 204 | Floor Area: 68 sq. m (731.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Program Related Storage | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 205 | Floor Area: 17 sq. m. (183.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|-------------|---------------|
| Wall Masonry | | | | | |
| Floor 9"x9" Vinyl Tile | Assumed Asbestos | All | 10 to 50 sq m | Non-Friable | A |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: Assumed asbestos-containing vinyl floor tiles. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Mechanical Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 206 | Floor Area: 31 sq. m (333.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|-------------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Concrete | | | | | |
| Ceiling Metal | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|--|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. |
|-----------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Learning Centre | Consultant: DCS | |
| Room/Area: 207 | Floor Area: 82 sq. m. (882.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Girls' Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 208 | Floor Area: 22 sq. m (236.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor Ceramic Tile | | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: LAN Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 209 | Floor Area: 22 sq. m. (236.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Drywall | None Detected | | | | |
| Floor Vinyl Sheeting | Not Sampled | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Vinyl sheeting not sampled due to installation date (post-1990). Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Boys' Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 210 | Floor Area: 22 sq. m (236.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|------------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Custodial Storage/Slop Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 210A | Floor Area: 3 sq. m. (32.3 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Computer Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 211 | Floor Area: 82 sq. m. (882.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 212 | Floor Area: 82 sq. m (882.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|---|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990).</p> |
|------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---------------------------|---|-----------------------------------|
| Level: 2 | Usage: Science Lab | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 213 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Visual Arts Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 214 | Floor Area: 82 sq. m. (882.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Staff Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 215 | Floor Area: 18 sq. m. (193.8 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Science Prep Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 215A | Floor Area: 10 sq. m. (107.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Science Prep. Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 215B | Floor Area: 12 sq. m. (129.2 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Computer Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 216 | Floor Area: 82 sq. m. (882.6 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-----------------------|---|
| Content Notes: | Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). |
|-----------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---------------------------|---|-----------------------------------|
| Level: 2 | Usage: Science Lab | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 217 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Staff Washroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 218 | Floor Area: 3.9 sq. m. (42.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

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|-----------------------|-------------------------------|---|-----------------------------------|
| Level: 2 | Usage: Mechanical Room | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 220 | Floor Area: | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

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|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
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Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Custodial Storage/Slop Room | Consultant: DCS | |
| Room/Area: 220A | Floor Area: 4.6 sq. m. (49.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | SCDSB Update: Nov 25, 2014 |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Staff Workroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 222 | Floor Area: 35 sq. m. (376.7 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|---------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|---------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|-----------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Classroom | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: 224 | Floor Area: 81 sq. m. (871.9 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|---|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995). |
|-------------------------------|---|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|--|---|-----------------------------------|
| Level: 2 | Usage: Corridor (Between Room 201 & Room 202) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C201 | Floor Area: 180.6 sq. m. (1944.0 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|--|------------------|-----------------------|--------------------------|---------|---------------|
| Wall Masonry | | | | | |
| Floor 12"x12" Vinyl Tile | None Detected | | | | |
| Ceiling 2'x4' Suspended Ceiling Tile | Not Sampled | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|------------------------------|--|
| <p>Content Notes:</p> | <p>Inspection Notes: No asbestos-containing materials observed. Suspended ceiling tiles not sampled due to manufacturing date (post-1990). Note: Area originally surveyed as COR-6.</p> |
|------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.



Asbestos Survey Results - Detailed Survey Form

Stayner Collegiate Institute

| | | | |
|------------------------|---|---|-----------------------------------|
| Level: 2 | Usage: Corridor (Between Room 213 & E3) | Consultant: DCS | SCDSB Update: Nov 25, 2014 |
| Room/Area: C202 | Floor Area: 106.7 sq. m. (1148.5 sq. ft) | Most Recent Survey: Feb 18, 2008 | |

| Component of Room | Asbestos Content | Location Within Space | Description c/w Quantity | Friable | Accessibility |
|------------------------|------------------|-----------------------|--------------------------|---------|---------------|
| Wall | | | | | |
| Floor | | | | | |
| Ceiling | | | | | |
| Mechanical | | | | | |
| Fireproofing (Sprayed) | | | | | |
| Other | | | | | |

| | |
|-------------------------------|--|
| Content Notes: | Inspection Notes: Area not surveyed due to year of construction (1995) |
|-------------------------------|--|

Accessibility
 A - Areas of the building within reach (from floor level) of all building users.
 B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder.
 C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos.
 C (concealed) - Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
 D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos.

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 01 35 26 Environmental Protection.
- .2 Section 03 30 00 Cast-in-place Concrete.
- .3 Section 07 21 20 Insulation.
- .4 Divisions 15 & 16

1.2 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Protection of Existing Features

- .1 Existing buried utilities and structures:
 - .1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .2 Prior to commencing excavation work, obtain location of underground services from applicable authorities. Clearly mark such locations to prevent disturbance during work.
 - .3 Confirm locations of buried utilities by careful test excavations.
 - .4 Maintain and protect from damage known services. When unknown utilities or structures are encountered, obtain direction from consultant before moving or otherwise disturbing them.
 - .5 Rectify at no cost to the Owner, any damage to known services or structures resulting from work of this Section.
 - .6 Repair, remove or re-route unknown services or structures in area of excavation as directed by Consultant. Costs for such work will be paid by Owner. Submit complete breakdown of cost of such work. Amount approved will be added to contract sum.
 - .7 Record location of maintained, re-routed and abandoned underground lines.

.2 Existing structures and surface features:

- .1 Protect existing structures, fences, walls, paving and other property on site and on adjacent property from damage by earthwork performed by this Section; by excavating, trenching, and grading; by removing, stockpiling, and transporting of materials; by blown sand, dirt, and dust derived from earthwork; by collapse or movement of excavated banks and stockpiles; and by storm water from altered drainage courses.

PART 2 - PRODUCTS

2.1 Materials

.1 Type 1 fill: Granular A - OPSS 1010 and following requirements:

- .1 Crushed, pit run or screened stone, gravel or sand consisting of hard, durable particles free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- .2 Gradations to be within limits specified when tested to ASTM C136-84a and ASTM C117-87. Sieve sizes to CAN/CGSB-8.2-M88 as shown:

| <u>Sieve Designation</u> | <u>% Passing</u> |
|--------------------------|------------------|
| 26.5 mm | 90-100 |
| 9 mm | 85-100 |
| 13.2 mm | 65-90 |
| 9.5 mm | 50-73 |
| 4.75 mm | 35-55 |
| 1.18 mm | 15-40 |
| 0.300 mm | 5-22 |
| 0.150 mm | 0-8 |
| 0.075 mm | 0-8 |

- .3 Type 1 fill: Granular A is to be used in 150mm thickness immediately below all exterior and interior concrete slabs on grade, asphalt paving, concrete drives, and walkways.

.2 Type 2 fill: Granular B - OPSS 1010 and following requirements:

- .1 Crushed, pit run or screened stone, gravel or sand consisting of hard, durable particles free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- .2 Gradations to be within limits specified when tested to ASTM C136-84a and ASTM C117-87. Sieve sizes to CAN/CGSB-8.2-M88 as shown:

| <u>Sieve Designation</u> | <u>% Passing</u> |
|--------------------------|------------------|
| 150 mm | 90-100 |
| 26.5 mm | 50-100 |
| 19 mm | 85-100 |
| 4.75 mm | 20-55 |
| 1.18 mm | 10-40 |
| 0.300 mm | 5-22 |
| 0.075 mm | 2-8 |

- .3 Type 2 fill: Granular B, to be used for all compacted and Engineered backfill required below Granular A to meet design elevations.

- .3 Type 3 fill: selected material from excavation or imported material approved by Consultant for use intended, unfrozen and free from rocks larger than 75 mm, cinders, ashes, sod, refuse or other deleterious materials and compactable to a minimum density of 85% Standard Proctor Dry Density. All material excavated from site to be stockpiled immediately east of existing fence line.
- .4 All granular product to be imported (new) to the site. Re-use of existing material not permitted without approval of inspection and testing Engineers and the Architect. Approved re-use of existing fill will be a credit to the contract.

PART 3 - EXECUTION

3.1 Site Preparation

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

3.2 Stripping of Topsoil

- .1 Remove topsoil completely from areas of excavation for construction, from under areas to be paved or surfaced, from areas to be regraded and from areas utilized for construction purposes.
- .2 Strip topsoil and organic matter completely to full depth. Avoid mixing topsoil with subsoil.
- .3 Stockpile good topsoil, acceptable for reuse, in separate locations as directed by Consultant. Stockpile height not to exceed 2 m.
- .4 Re-use of existing top soil not approved at this time.

3.3 Clearing

- .1 Remove trees, logs, shrub, brush, other vegetation, debris, abandoned paving, structures, fences, and other items which are not incorporated into the project or in its site development, or as otherwise shown on drawings. Protect items which are indicated on drawings to remain. Grub out roots of cleared vegetation to at least 450 mm below existing grade. Remove from the site and dispose of cleared items.

3.4 Disposal of Excavated Materials

- .1 Remove from site concrete, asphalt, surplus topsoil, granulars, rock and any excavated material not required or not approved by Consultant for purpose of fill or backfill on site. Conform to local government requirements for disposal of such materials. Disposal site to meet requirements for MOE Table 2 guideline standards.

3.5 Stockpiling

- .1 Stockpile fill materials in areas designated by Consultant. Stockpile granular materials in manner to prevent segregation. Re-use of existing fill cannot be assumed for re-use.
- .2 Protect fill materials from contamination.
- .3 Excavated granulars and topsoils approved for reuse are to stockpiled at approved designated

area on site. All other materials as outlined in Item 3.3 Clearing, are to be removed from site, including all excavated materials not suitable for new construction.

3.6 Dewatering and Heave Prevention

- .1 Keep excavations free of water, from whatever cause, while work is in progress.
- .2 Protect open excavations against flooding and damage due to surface run-off.
- .3 Dispose of water in a manner not detrimental to public and private property, or any portion of work completed or under construction.
- .4 Submit for Consultant's review details of proposed dewatering methods, such as dikes or well points.
- .5 Provide pumps, suction and discharge lines of sufficient capacity to keep excavations free of water at all times.
- .6 Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials before discharging to storm sewers, water courses or drainage areas.
- .7 Protect excavations and foundations from frost when weather forecast calls for temperatures less than 5°C.

3.7 Excavation

- .1 Excavate all material down to elevations and dimensions as indicated and required for completion of work. Excavate beyond wall faces sufficiently to allow wall construction and other specified installations.
- .2 Excavation must not interfere with normal 45° splay of bearing from bottom of any footing.
- .3 For trench excavation, unless otherwise authorized by Consultant in writing, do not excavate more than 30 m of trench in advance of installation operations and do not leave open more than 15 m at end of day's operation.
- .4 Excavate areas under driveway concrete slabs on grade and asphalt pavement as required. Excavate for sidewalks to depth required and sufficient to expose firm undisturbed subsoil, free of organic matter and to Consultant's satisfaction.
- .5 Bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .6 Do not disturb soil within branch spread of trees or shrubs that are to remain. If excavating through roots, excavate by hand and cut roots with sharp axe or saw.
- .7 Obtain Consultant approval of completed excavation.
- .8 Do not excavate beyond extent of contract. Any sub-surface excavations required to exceed the design elevations shall be dealt with as follows:
 - .1 General Contractor to excavate to the design elevations and as described herein.
 - .2 General Contractor to arrange for the Testing and Inspection Company to be on site to document the presence of unacceptable subsurface conditions and to confirm that excavation is at the design depth.

- .3 The Testing and Inspection Company will oversee any and all required additional excavations.
- .4 The Testing and Inspection firm is to ensure that any additional excavation work is minimized. When an acceptable founding elevation has been achieved, the revised founding elevation is to be confirmed and documented by the Testing and Inspection Company.
- .5 The Testing and Inspection Company is to document all site information necessary for verification of all additional costs as submitted by the General Contractor.
- .6 All Change Orders submitted for additional subsurface work shall include verification documentation from the Testing and Inspection Company.
- .9 Where over-excavation occurs that has not been authorized as specified herein, correct at no additional cost to Owner, as follows:
 - .1 Fill under all areas: Use Granular "B" fill in max. 200 mm lifts, each lift compacted to 100% Standard Proctor Density.

3.8 Fill Types and Compaction

- .1 Use fill of types as indicated or specified below. Compaction densities are percentages of maximum dry densities obtained from ASTM D698-78.
 - .1 Exterior side of perimeter walls: use Type 3 fill to subgrade level to within 1200mm of exterior wall and Type 2 fill within 1200mm to wall face. Compact to 95% Standard Proctor Dry Density.
 - .2 Within building area: use Type 2 to underside of base course for floor slabs. Compact to 100% Standard Proctor Dry Density.
 - .3 Under concrete slabs: provide min. 200 mm compacted thickness base course of Type 1 fill to underside of slab or underside of underslab insulation as indicated on drawings. Compact base course to 100% Standard Proctor Dry Density.
 - .4 Under exterior concrete slabs, sidewalks and asphalt pavements use Type 2 fill to underside of sub-base course. Compact to 98% Standard Proctor Dry Density.
 - .5 Place fill in layers of 150 mm maximum, and compact each to specified compaction density before placing next layer.
 - .6 Compact fill, to specified compaction density with a heavy vibrating roller. Compact fill adjacent to walls, piers, or wherever else heavy roller equipment cannot approach with mechanical tampers to equivalent density.
 - .7 Engineered Fill, where indicated on drawings or specified shall be Type 1 or Type 2 fill compacted to 100% Standard Proctor Dry Density. Engineered fill is required below all building, concrete and asphalt drive areas.

3.9 Bedding and Surround of Underground Services

- .1 Place and compact granular material for bedding and surround of underground services as indicated and as specified in Division 15 & 16.

- .2 Place bedding and surround material in unfrozen condition.

3.10 Backfilling

- .1 Do not proceed with backfilling operations until Consultant has inspected and approved installations.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Do not use backfill material which is frozen or contains ice, snow or debris.
- .4 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.
- .5 Backfilling around installations.
 - .1 Co-ordinate with installation of board insulation as specified in Section 07212.
 - .2 Place bedding and surround material as specified elsewhere.
 - .3 Do not backfill around or over cast-in-place concrete within 24 h after placing.
 - .4 Place layers simultaneously on both sides of installed work to equalize loading. Difference not to exceed 0.6 m.
- .5 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:
 - .1 Permit concrete to cure for minimum 14 days or until it has sufficient strength to withstand earth and compaction pressure and approval obtained from Consultant or:
 - .2 If approved by Consultant, erect bracing or shoring to counteract unbalance, and leave in place until removal is approved by Consultant.

3.11 Site Grading

- .1 Rough grade to levels, profiles and contours allowing for surface treatment as indicated. Cut or fill the site area to extent shown on drawings.
- .2 When required, raise subgrade to rough grade levels with Type 3 fill, deposited in layers not to exceed 200 mm. Consolidate each layer before placing the next.
- .3 Do not place material which is frozen nor place material on frozen surfaces.
- .4 Slope grade away from building for minimum distance of 4 m.
 - .1 Minimum 2% for grassed areas.
 - .2 Minimum 1% for hard surface areas.
- .5 Protect newly graded and filled areas from washouts and settlements caused by rain and water drainage. Fill and grade settled or washed out areas to required levels and slopes before completion of project.

3.12 Inspection and Testing

- .1 An inspection and testing company will be appointed and paid for as specified in Section 01 20 00. Frequency of tests will be determined by Consultant.
- .2 Testing will include:
 - .1 Verification that subgrade exposed by removal of existing soil is capable of supporting fill, floor slabs and pavements.
 - .2 Verification that subgrade has been compacted to specified density.
 - .3 Verification that fill has been placed and compacted as specified.

- .4 Inspection and verification of engineered fill, where required.

3.13 Removal of Surplus Materials

- .1 Remove from site all surplus excavated material as directed by Consultant. Removal of surplus material will be a Cash Allowance expenditure.

3.14 Restoration

- .1 Upon completion of work, remove waste materials and debris, trim slopes, and correct defects as directed by Consultant.
- .2 Clean and reinstate areas affected by work as directed by Consultant.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 02 31 50 Excavating, Trenching and Backfilling.

1.2 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.3 Material Certification

- .1 Upon request, submit manufacture's test data and certification that asphalt cement meets requirements of this section.

1.4 Protection

- .1 Keep vehicle traffic off newly paved areas until paving surface temperature has cooled below 38°C. Do not permit stationary loads on pavement until 24 hours after placement.
- .2 Provide access to buildings as required. Arrange paving schedule so as not to interfere with use of premises.

PART 2 - PRODUCTS

2.1 Materials

- .1 Granular Base: Granular "A", OPSS 1010.
- .2 Granular Sub-base: Granular "B" (type 2), OPSS 1010.
- .3 Asphalt hot mix: Asphaltic concrete HL3 and HL8 mixtures, OPSS 1150.05.
- .4 Asphalt joint painting material: SS-1 Emulsified asphalt, OPSS 1103.05.
- .5 Marking Paint: OPSS 1710.05, CGSB 1-GP-74M, colour yellow.

2.2 Paving Equipment

- .1 Self propelled mechanical: OPSS 310.06.01. Blade graders not permitted for spreading asphalt.
- .2 Self propelled Rollers:

- .1 Breakdown and finish rollers, OPSS 310.06.02.
- .2 Intermediate rollers, OPSS 310.06.02.
- .3 Vibratory rollers, minimum 1200mm drum diameter.
- .3 Hauling trucks: of adequate size, speed and condition to ensure orderly and continuous paving operation.
 - .1 Crushed, pit run or screened stone, gravel or sand.
- .4 Hand tools: suitable tools as required.

PART 3 - EXECUTION

3.1 Preparation

- .1 Set out work to lines and levels indicated. Maintain such lines and levels for duration of work.
- .2 Compact subgrade to a minimum of 100% Standard Proctor Dry Density, ASTM D698.
- .3 Grind existing asphalt to a minimum width of 300mm and to a depth of 40mm to provide lap joints. Remove broken and loose material.
- .4 Verify grades of drains and other items set in paving area for conformity with elevations and sections before placing granular base material.
- .5 Confirm the following base preparation prior to the work of the Section. All organically included matter and any fill must be removed. Exposed subgrade must be proofrolled and inspected, in order to detect any soft or saturated areas. Proofrolling is carried out prior to the placement of any subbase course fill materials. Questionable areas encountered during proofrolling must be removed and replaced with a select subgrade material; uniformly compacted, in lifts not exceeding 30 cm in thickness, to at least 95% Standard Proctor Dry Density. Approved on site excavated soil may be used for subgrade backfilling purposes and should be determined through an onsite Observation and Testing Program.

3.2 Placing Granular Base

- .1 Exercise due care at all times to prevent granular materials from becoming contaminated by clay or other types of deleterious materials.
- .2 Place materials immediately following sub-grade review by Consultant to required width and thickness indicated in layers not exceeding 150 mm un-compacted thickness for Granular "B" sub-base, and 100 mm for Granular "A" base. Grade each layer to a smooth surface conforming to required cross-section and compact to minimum 100% of Standard Proctor Dry Density, ASTM D698. In areas not accessible to rolling equipment, compact to specified density with mechanical tampers.
- .3 Apply water as necessary during compacting to obtain specified density.
- .4 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.
- .5 Proof roll top of base upon completion of fine grading and compaction.
- .6 Where proof rolling reveals defective base or sub-base, remove defective materials to depth and extent directed by Consultant and replace with new materials in accordance with this Section at

no extra cost.

3.3 Placing Asphalt Pavement

- .1 Compacted granular base shall be reviewed by Consultant before commencing asphalt paving.
- .2 Air temperature during placing of mixture shall be minimum 7°C and rising. Temperature of mixture when spread shall be not less than 120°C nor more than 150°C. Do not increase temperature of mixture to offset hauling.
- .3 Compact asphaltic mixture as soon as it can bear roller without undo displacement or hair cracking and continue until all roller marks are eliminated. Keep speed of roller slow enough to avoid displacement of mixture. Keep roller wheels slightly moistened by water to prevent adhesion of mixture. Excess water not permitted Compact mixture with hot tampers along all exposed edges and in locations that are not easily accessible to machine roller.
- .4 Use self propelled Class "S1" roller for initial and final rolling. Use self propelled Class "R" roller for intermediate rolling. Intermediate roller shall follow breakdown roller as closely as possible.
- .5 Do not place any asphaltic course less than 25 mm thick nor more than 75 mm thick and compact to a density not less than 98% of 75 blow Marshall density in accordance with ASTM D1559.
- .6 Upon completion of compaction each pavement course shall be smooth and true to crown and grade with variation not more than 3 mm from specified thickness and free from depressions exceeding 3 mm as measured with 3 m straight edge placed in any direction.
- .7 Trim exposed edges to neat straight lines. Form a thickened edge band of asphalt to strengthen exposed pavement edges. Straight lines to be within 10 mm over 5 m. Curves to appear continuous at one radius with a smooth transition between two different radii.
- .8 Provide minimum slope of 1% for finish paving. Ensure that drainage is effected from all areas without formation of puddles.

3.4 Joints

- .1 Cut back bituminous course to its full depth in straight or curved lines as required to expose a fresh, straight and vertical surface. Remove broken and loose material. Make transverse and longitudinal joints and joints between new and old paving precisely and carefully.
- .2 Asphalt shall be placed in such a manner that joint shall not be allowed to cool before adjacent asphalt course is applied.
- .3 Lap surface courses over joints in binder courses minimum 300 mm and bond them well.
- .4 Bond joints between new and existing pavements and joints between paving placed on successive days. Paint joints and contact surfaces of other materials such as sidewalks and catch basins.
- .5 Carefully place and compact hot asphaltic material against joints. Correct any unsatisfactory joint before proceeding with work.
- .6 Feathering of joints is not permitted.

3.6 Pavement Design

.1 Type 1 - Heavy Duty Asphalt Pavement: All parking and drive areas.

- .1 Sub-base course: 300 mm Granular "B".
- .2 Base course: 150 mm Granular "A".
- .3 Binder course: 75 mm HL8 asphalt in two layers.
- .4 Surface Course: 40 mm HL3 asphalt

.2 Type 2 - Medium Duty Asphalt Pavement: All playground areas

- .1 Sub-base course: 300 mm Granular "B".
- .2 Base course: 150 mm Granular "A".
- .3 Binder course: 38 mm HL8 asphalt in two layers.
- .4 Surface Course: 38 mm HL3 asphalt

3.7 Field Quality Control

.1 An independent inspection and testing company will be appointed and paid for as specified in Section 01400, to test compaction of subgrade, granular base and asphalt.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 02 31 50 Excavating, Trenching and Backfilling.
- .2 Section 02 51 10 Asphalt Paving.
- .3 Section 03 30 00 Cast-in-Place Concrete

1.2 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.3 Protection

- .1 Prevent damage to building, landscaping, fences and adjacent property. Make good any damage.
- .2 Keep traffic off new concrete until it has properly cured.

PART 2 - PRODUCTS

2.1 Materials

- .1 Base: Granular "A", OPSS 1010.
- .2 Concrete: CAN3-A23.1/A23.2 air-entrained, 5% to 7%, 35 MPa at 28 days.
- .3 Reinforcing steel bars: CSA G30.12-M, Grade 400.
- .4 Welded steel wire fabric: CSA G30.5-M.
- .5 Curing compound: Chlorinated rubber based, ASTM C309 Type 2. Masterseal by Master Builders Company Limited or equal.
- .6 Expansion joint filler: preformed, non-extruding and resilient bituminous, OPSS 1308 for Type "A".
- .7 Plywood and wood formwork: CAN/CSA-A23.1/A23.2-M90.
- .8 Formwork release agent: C.R.A. by Sternson, Duogard by W. R. Meadows of Canada Ltd. or Procote by Conchem Lafarge.

PART 3 - EXECUTION

3.1 Preparation

- .1 Set out work to lines and levels shown on drawings. Maintain such lines and levels.
- .2 Fine grade, shape and compact sub-base to minimum of 98% Standard Proctor Dry Density, ASTM D698.

3.2 Installation

- .1 Place granular base, immediately following sub-grade review by Consultant to required width and thickness in layers not exceeding 100 mm un-compacted thickness. Minimum compacted thickness under concrete walks, curbs and gutters: 150 mm.
- .2 Maintain true grade and cross section for each layer of material and grade and compact each layer to a minimum of 98% of Standard Proctor Dry Density, ASTM D698.
- .3 Install concrete walks and curbs as indicated on drawings.
- .4 Formwork:
 - .1 Construct formwork to provide straight lines and smooth flowing curved lines as indicated.
 - .2 Apply form release agent to surfaces in contact with concrete.
 - .3 Remove forms when concrete is fully cured.
- .5 Concrete:
 - .1 Pour concrete on prepared sub-base to required levels and dimensions, minimum 150 mm thick for sidewalks. Execute work to CAN3-A23.1/A23.2.
 - .2 Do not pour concrete when air temperature is, or may fall below 5°C during or within 24 hours of pour, unless precautions are taken to prevent damage to concrete resulting from low temperature.
 - .3 Reinforce sidewalks with 152 x 152 x MW 18.7 x MW 18.7 wire fabric.
 - .4 Reinforce curbs with 1-15M top and bottom.
 - .5 Round edges of sidewalks and joints with 10 mm radius edging tool.
 - .6 Immediately after floating, give sidewalks a uniform broom finish.
 - .7 Finish surfaces to tolerance of 3 mm in 3 m as measured with straight edge placed on surface.
 - .8 Install tooled transverse contraction joints after floating, when concrete is stiff, but still plastic as indicated on drawings, or where not indicated, at intervals of 1.5 m.
 - .9 Construct expansion joints with joint filler in sidewalks at intervals of 4.5 m. Install expansion joints adjacent to building, concrete curbs and around objects occurring in sidewalks. When sidewalk is adjacent to curb, make joints of curb and sidewalks coincide.
 - .10 Sawcut control joints in curbs and gutters at intervals of 4.5 m.

- .11 Apply membrane forming curing compound as soon as surface is free of bleed water to uniformly cover exposed concrete surfaces at a rate of not less than 1.0 litre/5 sq. m. Maintain this protection for minimum 7 days.

3.3 Field Quality Control

- .1 An independent inspection and testing company will be appointed and paid for as specified in Section 01400.
- .2 Testing of concrete shall be in accordance with CAN/CSA-A23.2-M.
- .3 Each test shall consist of 3 cylinders plus one additional site cured cylinder during cold weather concreting.
- .4 Slump test and air entrainment test shall be made from same batch of concrete from which test cylinders are made.
- .5 Tests shall include mix proportions and design.
- .6 Inspection and testing company shall forward copy of reports to General Contractor, Concrete Sub-Contractor, Owner, Consultant and Structural Engineer.
- .7 Cooperate with and assist inspection and testing company's personnel during inspection and tests.
- .8 Remove defective materials and completed work which fail tests and replace as directed by Consultant.
- .9 Where work or materials fail to meet strength requirements as indicated by test results, pay costs of additional inspection and testing required for new replacement work or materials.

End of Section

PART 1 - GENERAL

1.1. Description

- .1 This section specifies the supply and placing of topsoil and sod as per drawings.
- .2 Comply with all requirements of the General Conditions.

1.2 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.3 Quality Assurance

- .1 The contractor must have 5 years experience in sodding work.

1.4 Product, Delivery, Storage and Handling

- .1 Deliver sod to site within 24 hours of being harvested and lay sod within 48 hours thereafter, depending on suitable weather conditions and in accordance with good horticultural practice.
- .2 Small irregular or broken pieces of sod will not be accepted.
- .3 Prevent sod from drying out on site.
- .4 All topsoil is to be imported for this project to meet specifications.

1.5 Acceptance

- .1 Maintain sod in good condition until acceptance.
- .2 At the time of acceptance, the grass must not be more than 50mm high. Minimum acceptable cut height is 45mm. All sod must have a healthy and even stand of grass, free of thin, poor or burned-out patches.
- .3 Acceptance will be given when the sod is properly rooted, free of bare and dead spots and reasonably free of weeds in the opinion of the Contract Administrator.
- .4 Replace any deteriorated sod with new sod at the direction of the Contract Administrator.
- .5 The Contractor is responsible for a minimum of one cut of grass or as many cuts as required until acceptance.

1.6 Guarantee

- .1 Submit written guarantee that all sodding shall be guaranteed for a period of one (1) year commencing on the date of acceptance of substantial performance.
- .2 During the guarantee period, the Contractor shall make monthly inspections and replace all sod which is dead, or is not in a healthy vigorous growing condition.

PART 2 - PRODUCTS

2.1. Materials

- .1 Grass sod: Certified No.1 grade cultivated turf grass sod with a composition of 50% Kentucky Blue Grass and 50% Blue Cultivar either “Fylking” or “Baron” or as specified on the drawings, grown and sold in accordance with NSGA classifications. At the time of sale it must have a strong, fibrous root system and be free of stones and burned or bare spots. Damaged and broken pieces shall not be laid and shall be removed from the site immediately.
- .2 Sod pegs: 25mm x 25mm x 230mm (minimum length). Ensure pegs are long enough to securely anchor sod.
- .3 Topsoil: a fertile, friable, natural loam; containing not less than 4% organic matter for clay loams and not less than 2% organic matter for sandy loams to a maximum of 15%, and capable of sustaining vigorous plant growth, free of subsoil contamination, roots and stones over 50mm diameter, reasonably free of weeds (as determined by the Contract Administrator), and having a pH ranging from 6.0 to 7.5.

PART 3 - EXECUTION

3.1. Preparation

- .1 Rototill all areas that are to receive new sod. Cultivate to a minimum depth of 100mm. Remove all rocks, roots and grass or weed clumps from the surface.
- .2 Compact surface to 85% Standard Proctor Dry Density.
- .3 Scarify to a depth of 25mm before placing additional topsoil or sod.

3.2. Spreading of Topsoil

- .1 Spread dry topsoil during dry weather over approved, dry, unfrozen subgrade where sod is to be installed.
- .2 Keep topsoil 25mm below finished grade for sodded areas.
- .3 Fine grade topsoil eliminating rough and low areas and to ensure positive drainage.
- .4 Roll topsoil with a 50 kg roller to compact and retain surface. Finished depth of prepared topsoil to be minimum 100mm.
- .4 Provide a finished topsoil surface that is smooth and firm against footprints with a fine, loose texture before sod is placed.

3.3. Installation

- .1 Lay sod with tight butt joints. Do not leave any open joints or overlap adjacent pieces of sod. Alternate joints on each row of sod.
- .2 Ensure finished sod surface is flush with adjoining grass areas, pavement or top surface of curbs.
- .3 On slopes steeper than 4:1, lay sod perpendicular to the slope and peg each row at intervals of not more than 600mm on each side of the sod strip. Drive pegs flush with surface of sod.
- .4 Immediately after installation, water the sod with sufficient quantity of water to penetrate the sod and the top 50mm of the underlying topsoil.
- .5 Apply 8-32-16 slow release commercial fertilizer at the rate of 22 kg per 1000 square metres.
- .6 When sod has dried sufficiently to prevent damage, roll all sodded areas to ensure a good bond between sod and topsoil.
- .7 Protect all newly sodded areas with warning signs or barricades.
- .8 Continue to water and maintain sodded areas until healthy root growth is established.

3.4 Protection

- .1 Assume full responsibility for protection of all sodded areas from all sources until performance acceptance.
- .2 Erect protective barriers and post signs where necessary and maintain same until performance acceptance.
- .3 Remedy all damages, wash-outs and eroded areas resulting from weather, improper protection or other causes.

3.5 Clean Up

- .1 The Contractor must leave the site in a neat and orderly condition upon completion of work on a daily basis, all to the satisfaction of the Contract Administrator.

End of Section

PART 1 – GENERAL

1.1 Related Sections

- .1 Section 03 20 00 Concrete Reinforcement.
- .2 Section 03 30 00 Cast-in-Place Concrete .
- .3 Section 02 52 30 Concrete Walks and Curbs
- .4 Section 10 99 00 Miscellaneous Specialities

1.2 References

- .1 CAN/CSA-A23.1-94, Concrete Materials and Methods of Concrete Construction.
- .2 CSA O121-M1978, Douglas Fir Plywood.
- .3 CAN/CSA-S269.3-M92, Concrete Formwork.
- .4 CAN3-0.86.1-M94, Engineering Design in Wood (Limit State Design).
- .5 CSA 0513-M1980 Poplar Plywood.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Design

- .1 The design of formwork, shoring, and related work shall be the responsibility of the Contractor who shall engage competent personnel to do so.
- .2 Design shall be in conformance to regulations of the Ministry of Labour for the Province of Ontario.
- .3 Formwork shall be of sufficient strength, rigidity to support all concrete, construction loads, wind, taking into account the proposed rate and methods of pouring concrete, so that the resulting finished concrete conforms to shapes, lines and dimensions that the members show in detail.

PART 2 - PRODUCTS

2.1 Materials

- .1 Formwork lumber: plywood and wood formwork materials to CSA O121-M1978, Douglas Fir Plywood, CAN3-086.1, and CAN3-086.1.1S1.
- .2 Falsework materials: to CAN/CSA-S269.3-M92.
- .3 Artform Architectural Concrete Bases at steel columns:
 - .1 Kellamy 600R as manufactured by Artform International Inc., Uxbridge, On.
 - .2 Artform concrete bases to be supplied under this Section where noted on details.
- .4 Form ties: removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25mm dia. in concrete surface. Wire ties and spreaders not acceptable. Ties for architectural concrete to be Fibreglas Formtie Systems - "SuperTie" or equivalent.
- .5 Form release agent: chemically active release agents containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing concrete from sticking to forms.
- .6 Form stripping agent: colourless mineral oil, free of kerosene, with viscosity between 50 and 24mm²/s at 40oC, flashpoint minimum 150°C, open cup.

PART 3 - EXECUTION

3.1 Erection

- .1 Design, fabricate and erect formwork to CAN/CSA-A23.1-94, Clause II, and request Consultant to review completed formwork before pouring concrete.
- .2 Verify lines, levels and column centres before proceeding with formwork and ensure dimensions agree with drawings.
- .3 Obtain Consultant's approval for use of earth forms.
- .4 Hand trim sides and bottoms and remove loose earth from earth forms before placing concrete.
- .5 Construct falsework in accordance with CSA S269.1-1975.
- .6 Construct forms to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CAN/CSA-A23.1-94.
- .7 Align form joints and make watertight. Keep form joints to minimum. Align forms to ensure no visible defects appear on finished concrete work.
- .8 Align form ties both vertically and horizontally. Tighten form ties, particularly at corners.

- .9 Use 25mm chamfer strips on all exposed exterior corners, unless indicated otherwise on drawings.
- .10 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.
- .11 Line forms for exposed faces of architectural concrete.
- .12 Clean formwork in accordance with CAN/CSA-A23.1-94, before placing concrete.
- .13 Apply release agent by spray in accordance with manufacturer's recommendations. Ensure surfaces of forms receive uniform coating.
- .14 Leave formwork in place in accordance with CAN/CSA-A23.1-94.
- .15 Re-use of formwork and falsework subject to requirements of CAN/CSA-A23.1-94.

3.2 Inserts

- .1 Set openings and sleeves, ties, anchor bolts and other inserts in concrete floors and walls, as required by other trades.
- .2 Verify all sleeves, openings, inserts and other items shown on structural drawings with architectural, mechanical and electrical drawings. Sleeves, openings, inserts and other items not shown shall be approved by the Consultant.

3.3 Joints in Concrete

- .1 Neatly form construction and expansion joints along straight line, level or plumb and in accordance with details and locations shown on drawings.

End of Section

PART 1 – GENERAL

1.1 Related Sections

- .1 Section 02 52 30 Concrete Walks and Curbs
- .2 Section 03 10 00 Concrete Formwork
- .3 Section 03 30 00 Cast-in-Place Concrete

1.2 References

- .1 CAN/CSA-A23.1-M94, Concrete Materials and Methods of Concrete Construction.
- .2 CAN3-A23.3-M84, Design of Concrete Structures for Buildings.
- .3 CSA G30.3-M1983, Cold Drawn Steel wire for Concrete Reinforcement.
- .4 CSA G30.5-M1983, Welded Steel Wire Fabric for Concrete Reinforcement.
- .5 CSA G30.12-M1983, Billet-Steel Bars for Concrete Reinforcement.
- .6 CSA G30.16-M1977, Weldable Low Alloy Steel deformed Bars for Concrete Reinforcement.
- .7 ANSI/ACI 315-80, Details and Detailing of Concrete Reinforcement.
- .8 Reinforcing Steel Manual of Standard Practice, First Edition, 1992, Reinforcing Steel Institute of Ontario.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.5 Source Quality Control

- .1 Upon request, provide Consultant with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 5 weeks prior to commencing reinforcing work.
- .2 Upon request inform Consultant of proposed source of material to be supplied.

1.6 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 34 00.
- .2 Shop drawings consist of bar bending details, lists and placing drawings.
- .3 On placing drawings, indicate sizes, spacing, location and quantities of reinforcement and mechanical splices, with identifying code marks to permit correct placement without reference to structural drawings. Indicate sizes, spacing and location of chairs, spacers and hangers. Do drawings in accordance with Reinforcing Steel Manual of Standard Practice - by Reinforcing Steel Institute of Ontario.
- .4 Detail lap lengths and bar development lengths to CAN3-A23.3, unless otherwise indicated.

1.7 Substitutes

- .1 Substitution of different size bars permitted only upon written approval of Consultant.

1.8 Work Included

- .1 Supply and install all reinforcing steel for cast-in-place concrete work indicated on drawings.
- .2 Supply reinforcing steel for Section 04200 to be installed by masonry trades.

1.9 Product Handling

- .1 Store all reinforcing off the ground. Protect from dirt, change in fabricated form. Keep suspended at least 300 mm clear of ground.
- .2 Cover stock piles with waterproof tarps.

PART 2 - PRODUCTS

2.1 Materials

- .1 Reinforcing steel: billet steel, grade 400, deformed bars to CSA G30.12, unless indicated otherwise.
- .2 Cold-drawn annealed steel wire ties: to CSA G30.3.
- .3 Welded steel wire fabric: to CSA G30.5. Provide in flat sheets only.
- .4 Chairs, bolsters, bar supports, spacers: to CAN/CSA-A23.1.
- .5 Mechanical splices: subject to approval of Consultant.
- .6 Plain round bars: to CAN/CSA-G40.21.

2.2 Fabrication

- .1 Fabricate reinforcing in accordance with CAN/CSA-A23.1 and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Ontario.
- .2 Obtain Consultant's approval for locations of reinforcement splices other than shown on placing drawings.

- .3 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.

PART 3 - EXECUTION

3.1 Field Bending

- .1 Do not field bend reinforcement except where indicated or authorized by Consultant.
- .2 When field bending is authorized, bend without heat, applying a slow and steady pressure and to radius as required by CAN/CSA-A23.1-M90.
- .3 Replace bars which develop cracks or splits.

3.2 Cleaning

- .1 Before placing concrete, reinforcing steel shall be free of loose scale, rust, concrete splatter, dirt, and other coatings.
- .2 Clean reinforcing before placing concrete.

3.3 Openings

- .1 Unless otherwise indicated or specified reinforce top, sides and bottom of all openings with 2-15M bar. Extend bars 1000 mm beyond face of openings.

3.4 Placing Reinforcement

- .1 Place reinforcing steel as indicated on reviewed placing drawings and in accordance with CAN/CSA-A23.1.
- .2 Use plain round bars as slip dowels in concrete. Paint portion of dowel intended to move within hardened concrete with one coat of lead or asphalt paint. When paint is dry, apply a thick even film of mineral lubricating grease. Protect coated portions of bars with covering during transportation and handling.
- .3 Bars shall be in lengths conforming to CAN/CSA-A23.1-M94, Clause 12. Where bars are joined, lap at least distance required by CAN/CSA-A23.1-M94 unless indicated otherwise. Weld reinforcing bars, where indicated on drawings, to CSA W186-M90.
- .4 Lap wire mesh sections at least 150 mm and wire together securely.
- .5 Prior to placing concrete, obtain Structural Engineer's approval of reinforcing material and placement.

3.5 Quality Control

- .1 Provide competent supervision throughout the placing of reinforcement. Same foreman to be used throughout duration of the work.
- .2 Inspect the reinforcement continually ahead of the pour and maintain proper location.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 02 31 50 Excavating, Trenching and Backfilling
- .2 Section 03 10 00 Concrete Formwork
- .3 Section 03 20 00 Concrete Reinforcement
- .4 Section 02 52 30 Concrete Walks and Curbs
- .5 Section 10 99 00 Miscellaneous Specialities

1.2 References

- .1 ASTM C109/C109M-99; Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).
- .2 ASTM C309-98a; Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- .3 ASTM C827-95a(1997); Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures.
- .4 ASTM C939-97; Test Method for Flow of Grout for Pre-Placed Aggregate Concrete (Flow Cone Method).
- .5 ASTM D1751-97; Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- .6 CGSB 51-GP-51M; Polyethylene Sheet for Use in Building Construction.
- .7 CSA-A5-98; Portland Cement.
- .8 CSA A8-98; Masonry Cement.
- .9 CSA-A23.1-00; Concrete Materials and Methods of Concrete Construction.
- .10 CSA-A23.2-00; Methods of Test for Concrete.
- .11 CSA-A23.3-94(R2000); Design of Concrete Structures.
- .12 CSA A362-98; Blended Hydraulic Cement.
- .13 CSA-A363-98; Cementitious Hydraulic Slag.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Certificates

- .1 Minimum 4 weeks prior to starting concrete work submit to Consultant manufacturer's test data and certification by qualified independent inspection and testing laboratory that the following materials will meet specified requirements:

- .1 Portland cement.
 - .2 Supplementary cementing materials.
 - .3 Admixtures.
 - .4 Aggregates.
 - .5 Water.
 - .6 Joint Filler.
- .2 Provide certification that plant, equipment, and materials to be used in concrete comply with requirements of CAN/CSA-A23.1 and that mix design is adjusted to prevent alkali aggregate reactivity problems.

1.5 Construction Quality Control

- .1 Submit proposed quality control procedures for Consultant's approval.

1.6 Records

- .1 Keep record at job site showing date, time, ambient air temperature, place of each pour of concrete, together with transit-mix delivery slip certifying contents of pour.
- .2 Make records available to Consultant for inspection upon request.
- .3 Submit for review mix design for each class of concrete.

1.7 Cold Weather Curing and Protection Requirements

- .1 Provide adequate protection for the concrete by means of heated enclosures, coverings, insulation, or suitable combination of these methods when the outside air temperature is at or below 5°C. Conform to Clause 21 of CAN/CSA-A23.1.

1.8 Hot Weather Curing Protection Requirements

- .1 When the outside air temperature is at or above 27°C, protect freshly deposited concrete from drying too rapidly to prevent plastic shrinkage cracking. Conform to Clause 21 of CAN/CSA-A23.1.

1.9 Co-ordination with Mechanical and Electrical

- .1 Construct Housekeeping slabs. All floor penetrations in exposed spaces to be provided with 100mm high housekeeping pads, unless directed otherwise by Consultant.
- .2 Co-ordinate all requirements with Division 15 and 16.

PART 2 - PRODUCTS

2.1 Materials

- .1 Portland cement: to CAN/CSA-A5-M88.
- .2 Supplementary cementing materials: to CAN/CSA-A23.5.
- .3 Water: to CAN/CSA-A23.1.
- .4 Aggregates: to CAN/CSA-A23.1. Coarse aggregates to be normal density.
- .5 Water Reducing Admixture: Conforming to CAN3-A266.2-M78 and ASTM C494, Type A,

- Prokrete N by Conchem Lafarge, WR75 by Euclid Chemical Canada Ltd. or Pozzolith 322N by Master Builders Technologies Limited.
- .6 Air Entraining Admixture: Pro Air by Conchem Lafarge, Eucon Air by Euclid Chemical Canada Ltd. or MB-AE10 by Master Builders Technologies Limited, conforming to ASTM C260 and CAN3-A266.2-M78.
- .7 Chemical admixtures: to CAN3-A266.2. Consultant to approve accelerating or set retarding admixtures during cold and hot weather placing. Use of calcium chloride is not acceptable.
- .8 Non-premixed dry pack grout: composition of non-metallic aggregate Portland cement with sufficient water for the mixture to retain its shape when made into a ball by hand and capable of developing compression strength of 40 MPa at 7 days. M-Bed Standard by Sternson, V-3 Non-metallic Grout by W. R. Meadows of Canada Ltd., In-Pakt by C. C. Chemicals Canada Ltd. or Progrout by Conchem Lafarge.
- .9 Concrete Floor Sealer: Two-component, clear, water-based matte epoxy coating, Duochem 6035 roller applied two coat system or approved equal;
- .1 Solids content: 44% by weight, 40% by volume.
- .2 V.O.C: 183 g/L.
- .3 Water vapour transmission: 282 ng/Pa s m² per ASTM E96 Procedure B – water (2 mils D.F.T.)
- .4 Abrasion resistance: 111mg loss per ASTM D 4060 CS-17 wheels 1000 revolutions 1000 gr/wheel.
- .5 Tensile strength: 6.4 MPa per ASTM D 2370 (2.8 mils D.F.T.)
- .6 Elongation: 1.7% per ASTM D 2370 (71 microns D.F.T.)
- .7 Adhesion to concrete: less than 2.0 MPa (substrate failure).
- .8 Static coefficient of friction: 0.72 dry surface, 0.75 wet surface, per ASTM C 1028
- .9 Primer: Two-component, clear, water based gloss epoxy coating as specified above but with a gloss sheen, (Duochem 6030).
- .10 Premoulded joint fillers:
- .1 Fibre board joint filler: WR Meadows Sealtight "Deck-O-Foam" or approved equal, 13 mm thick x thickness of slab.
- .11 Sealant for control joints in concrete floors and where slab abuts foundation wall: Polyurethane base/multi-component, to CGSB 19-Gp-15a, Type I; shore hardness of 20-35; "Daraseal-U" by Grace.
- .12 Wet Curing: Water conforming to CAN/CSA-A23.1-M94, Clause 4, clear and entirely free from any elements which might cause staining of concrete, and minimum 0.1 mm (4 mils) thick polyethylene film as specified herein.
- .13 Polyethylene Film (for Water Curing): Minimum 0.1 mm (4 mils) thick, complying with maximum allowable moisture loss requirements of ASTM C156.
- .14 Polyethylene vapour barrier (below slab) minimum .25mm (10 mils) thickness to ASTM C171.
- .1 Vapour Barrier membrane must have the following properties:
- .1 Permeance as tested after conditioning (ASTM E 1745 paragraphs 7.1.2 – 7.1.5): less than 0.030 perms (1.70 ng)
- .2 Other performance criteria
- .1 Strength: Class A (ASTM E 1745)
- .2 Minimum thickness of the plastic retarder material: 0.25 mm (10 mils)
- .3 Accessories:

- .1 Seam Tape: Use tape provided by vapour barrier manufacturer.
- .2 Vapour-proofing Mastic: Use mastic provided by vapour barrier manufacturer.

2.2 Concrete Mixes

- .1 Ready-mixed concrete and concrete proportions shall be in accordance with CAN/CSA-A23.1-M94, Clause 14, and as follows.
- .2 Concrete shall be proportioned by the water-cement ratio and to provide a plastic and workable mix without the formation of free water on the surface.
- .3 Mix shall be designed for both strength and durability. Submit to Consultant the mix design for the different classes of concrete indicated.
- .4 The amount of free moisture in the aggregate shall be deducted from the amount of mixing water being added.
- .5 Specified slumps shall be maintained and checked periodically with slump tests.
- .6 Mix shrinkage control fibres into slab mix, where indicated on drawings, at rate of 0.9 kg/mn of concrete, unless otherwise indicated on drawings. Add admixture as required.
- .7 Class of Exposure: Refer to Clause 15 and Tables 7, 8 and 9 of CAN/CSA-A23.1-M94, and Class of Concrete table herein.
- .8 Air Content: Table 10 of CAN/CSA-A23.1-M94, according to category of exposure, and Class of Concrete table herein.
- .9 Concrete shall be designed and proportioned to yield the specified ultimate and compressive strength at 28 days as determined by laboratory testing standard 150 x 300 mm cylinders moist cured in the laboratory.
- .10 Concrete Topping: Max. slump to be 40mm, mix proportion for concrete topping to be as follows:
 - 1 part cement
 - 1-1/2 parts fine aggregate
 - 2-1/2 parts coarse aggregate 10mm max. size
 - 18 litres of water per 45 kg. of cement
- .11 Classes of concrete:

| CLASS OF CONCRETE | LOCATION | EXPOSURE CLASS | STRENGTH (MPa) | SLUMP (mm) | AIR (percent) |
|-------------------|---|----------------|----------------|------------|---------------|
| A | Footings | - | 20 | 80 | up to 3 |
| B | Foundation Walls | F-2 | 25 | 80 | 4 to 7 |
| C | Slab on Grade Inside Building* Composite Floor Deck | - | 25 | 80 | 3 to 5 |
| D | Slab on Grade Outside Building | C-1 | 35 | 80 | 5 to 8 |

PART 3 - EXECUTION

3.1 General

- .1 Do cast-in-place concrete work in accordance with CAN/CSA-A23.1.
- .2 Place concrete to prevent layering and segregation. Vibrate sufficiently to ensure thorough compaction, maximum density and according to CAN/CSA-A23.1, Clause 19.

3.2 Workmanship

- .1 Obtain Consultant's approval before placing concrete. Provide 24 hour notice prior to placing of concrete.
- .2 Pumping of concrete is permitted only after approval of equipment and mix.
- .3 Ensure formwork, reinforcement and inserts are not disturbed during concrete placement.
- .4 Prior to placing of concrete obtain Consultant's approval of proposed method for protection of concrete during placing and curing.
- .5 Maintain accurate records of poured concrete. Items to indicate date, location of pour, quality, air temperature and test samples taken.
- .6 Do not place load upon new concrete until authorized by Consultant.

3.3 Inserts

- .1 Set and build in inserts, anchors, frames, angles, sleeves, plates and similar type items supplied by other trades. Advise trades well in advance of scheduled placement to allow adequate time for supply of items to be built in. Have respective trades verify location of items supplied by them. Sleeves and openings greater than 100 x 100 mm not indicated on drawings must be approved by Consultant.
- .2 For floor areas with a floor drain, set floor drain at correct elevation and slope entire room (provide constant continuous slope) from perimeter wall to the floor drain. Make sure finish floor thickness are considered when setting floor drain elevation. Where multiple floor drains occur in the same room provide break points as indicated on the drawings.
- .3 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain approval of modifications from Consultant before placing of concrete.
- .4 Check locations and sizes of sleeves and openings shown on structural and civil drawings with architectural, mechanical and electrical drawings.
- .5 Anchor bolts:
 - .1 Place anchor bolts to templates under supervision of trade supplying anchors prior to placing concrete.
 - .2 Grout anchor bolts in preformed holes or holes drilled after concrete has set as approved by Consultant. Formed holes to be 100 mm in least dimension. Drilled holes to be minimum 25 mm larger in diameter than bolts/reinforcing bars used.
 - .3 Protect anchor bolt holes from water accumulations.
 - .4 Set bolts and fill holes with shrinkage compensating grout or epoxy grout.
 - .5 Locate anchor bolts used in connection with expansion shoes, rollers and rockers with due regard to temperature at time of erection.

3.4 Placing Grout

- .1 Grout under base plates using procedures in accordance with manufacturer's recommendations which result in 100% contact over grouted area.

3.5 Vapour Barrier Installation

- .1 Under slabs on grade place a 10 mils vapour barrier over the granulated underbed prior to placing floor slabs on grade within the confines of the building. Lap all edges minimum 150mm and place the upper layer of the vapour barrier at laps so that the direction of the concrete placing will be from the upper layer to lower layer. Extend the vapour barrier up the face of the enclosing walls to the level of the top of the floor slabs
- .2 Ensure that subsoil is approved geotechnical firm.
- .3 Install Vapour Barrier/Retarder in accordance with manufacturer's instructions and ASTM E 1643.
- .4 Unroll vapour barrier/retarder with the longest dimension parallel with the direction of the pour.
- .5 Overlap joints 150 mm and seal with manufacturer's tape.
- .6 Seal all penetrations (including pipes) per manufacturer's instructions.
- .7 No penetration of the vapour barrier/retarder is allowed except for reinforcing steel and permanent utilities.
- .8 Repair damaged areas by cutting patches of vapour barrier/retarder, overlapping damaged area 150 mm and taping all four sides with tape

3.6 Surface Tolerance

- .1 Surface tolerance in accordance with CAN/CSA-A23.1.

3.7 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 together by stapling, heat weld ends together or other positive fastening.
- .2 Locate and form isolation and construction joints as indicated. Install joint filler.
- .3 Use 13 mm thick joint filler to separate slabs-on-grade from vertical surfaces (except where perimeter insulation is installed in its place). Extend joint filler from bottom of slab and the top flush with finished slab surface unless indicated otherwise. Top portion of joint filler will be remove just prior to caulking of the joint.

3.8 Saw-Cut Joints

- .1 Sawcut control joints in slabs-on-grade where indicated on drawings, 5 mm wide x 38 mm deep unless indicated otherwise on drawings. Perform sawcutting 12 to 24 hours after concrete has been placed, as soon as concrete can be cleanly cut and before shrinkage cracks can form.
- .2 Fill sawcut control joints full depth with sealant in accordance with manufacturer's printed instructions, not less than 28 days after concrete placement. Joints shall be clean and dry when filled.

3.9 Surface Finishing

- .1 Finish concrete in accordance with CAN/CSA-A23.1.
- .2 Honeycomb: In locations where the repair of honeycomb is acceptable to Consultant, cut out defective areas and fill the space with a cement mortar of the same materials as the surrounding concrete. Incorporate a liquid latex bonding agent into the mix. Apply in layers not exceeding 25 mm in thickness.
- .3 Patching: Patching of exposed concrete is not permitted without acceptance of Consultant. Patching prior to acceptance shall be grounds for rejection of the concrete. Where patching is accepted, the exposed patch shall be indistinguishable from the surrounding finish after both are dry. Determine patching mixes by trial batches. Perimeter of cut-out areas shall have edges which are perpendicular to the surface. Incorporate a liquid latex bonding agent into the mix. Just prior to application, coat the base surface with the bonding agent. Cure patches by keeping continuously moist for seven days.
- .4 Unexposed Concrete Walls: Correct defects and remove fins.
- .5 Exposed Concrete Walls Architectural Finish Concrete: Produce finish on concrete no later than one day after forms removed. Wet surface and rub with carborundum brick until uniform colour and smooth texture produced. Do not use a cement paste. Rub exposed sharp edges to produce 3 mm radius unless otherwise indicated.

3.10 Finishing and Curing of Concrete Floors

- .1 Leave slabs level or uniformly sloped to drain where indicated, ready for finishing.
- .2 Machine float, power steel trowel and hand trowel interior slabs to produce smooth, dense, satisfactory surface free from ridges, voids or machine marks, whether scheduled to be left exposed or covered. Broom finish exterior slabs.
- .3 Use only competent mechanics to produce workmanship of highest quality.

3.11 Field Quality Control

- .1 An independent inspection and testing company will be appointed as specified in Section 01400.
- .2 Testing of concrete shall be in accordance with CAN/CSA-A23.2.
- .3 Each test shall consist of 3 cylinders plus one additional site cured cylinder during cold weather concreting.
- .4 Slump test and air entrainment test shall be made from same batch of concrete from which test cylinders are made.
- .5 Tests shall include mix proportions and design.
- .6 Inspection and Testing Company shall forward copy of reports to General Contractor, Concrete Sub-Contractor, Owner, Consultant and Structural Engineer.
- .7 Cooperate with and assist inspection and testing company's personnel during inspection and tests.
- .8 Remove defective materials and completed work which fail tests and replace as directed by Consultant.

- .9 Where work or materials fail to meet strength requirements as indicated by test results, pay costs If additional inspection and testing required for new replacement work or materials.

3.12 Patching

- .1 Make good temporary openings left in concrete work for pipes, conduit, ducts, shoring and other such work during construction using mix of same proportions as surrounding work. Reinforce as required, and finish to match surrounding work. Carry out patching as specified in standards specified herein.

3.13 Concrete Cover over Reinforcement

- .1 Ensure alignment of reinforcement in concrete slabs and walls with tolerance of 6mm but in now case less than minimum as prescribed below:
 - .1 Concrete Slabs 25mm
 - .2 Column Ties 40mm
 - .3 Walls exposed to weather or backfill 40mm
 - .4 Footings and Concrete Formed against Earth 75mm
 - .5 Slabs on Grade (top cover) 40mm
- .2 This Section to be superceded by Structural Drawing Specifications and Details where conflicting information is provided.

3.14 Interior Equipment / House Keeping Pads

- .1 Provide concrete pads under Mechanical and Electrical equipment where detailed. Refer Div. 15 and 16 for additional requirements.

End of Section

PART 1 – GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Section Includes

- .1 Provision of all labour, materials, equipment and incidental services necessary to provide all structural steel.

1.3 References

- .1 ASTM A307-00; Specification for Carbon Steel Bolts and Studs, 413MPa Tensile Strength.
- .2 ASTM A325-00; Specification for High Strength Heat Treated Structural Bolts for Structural Steel Joints.
- .3 ASTM A490-00; Specification for High-Strength Heat Treated Steel Structural Bolts.
- .4 CAN/CGSB-1.40-97; Primer, Structural Steel, Oil-Alkyd Type.
- .5 CSA-G40.20-98; General Requirements for Rolled or Welded Structural Quality Steel.
- .6 CSA-G40.21-98; Structural Quality Steel.
- .7 CAN/CSA-G164-M92 (R1998); Hot Dip Galvanizing of Irregularly Shaped Articles.
- .8 CAN/CSA-S16.1-94 (R2000); Limit States Design of Steel Structures.
- .9 CSA W47.1-92 (R2001); Certification of Companies for Fusion Welding of Steel Structures.
- .10 CSA W48-01; Filler Metals and Allied Materials for Metal Arc Welding.
- .11 CSA W55.3-1965 (R1998); Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.
- .12 CSA W59-M1989 (R2001); Welded Steel Construction (Metal Arc Welding).
- .13 CAN/CGSB-85.10-99; Protective Coatings for Metals.
- .14 CISC/CPMA 2-75; Quick-Drying Primer for use on Structural Steel.
- .15 CISC/CPMA 1-73a; Shop Primer.
- .16 SSPC, SP-7; Brush-Off Blast Cleaning.

1.4 Submittals

- .1 Mill Test Reports
 - .1 Submit 2 copies of mill test reports to Consultant showing chemical and physical properties and other details of steel to be incorporated into work at least 4 weeks prior to fabrication of structural steel. Qualified metallurgists confirming that tests conform to requirements of CSA G40.20 and CSA G40.21 shall certify such mill test reports.
 - .2 Upon request, inform Consultant of proposed source of material to be supplied,

including point of manufacture.

- .3 Fabricator of structural steel shall, in addition, provide an affidavit stating that materials and products used in fabrication conform to applicable material and products standards called for by design drawings and specifications.

.2 Design Of Details And Connections

- .1 Design details and connections in accordance with requirements of CAN/CSA-S16.1 to resist forces, moments, and shears and allow for movements indicated.

- .2 If connection for shear only (standard connection) is required:

- .1 Select framed beam shear connections from an industry-accepted publication such as "Handbook of the Canadian Institute of Steel Construction". Use two angle connections where possible.
- .2 If shears are not indicated, select or design connections to support reaction from maximum uniformly distributed load that can be safely supported by beam in bending, provided no point loads act on beam.
- .3 For non-standard connections, submit sketches and design calculations stamped and signed by qualified Professional Engineer registered or licensed in Place of the Work. In addition to the above, a qualified Professional Engineer registered or licensed in the Place of the Work must certify all connection design.
- .4 All bolted connections must be designed using minimum high strength ASTM A325 structural bolts, slip critical connection.

.3 Fabrication And Erection Documents

- .1 Submit copies of fabrication and erection documents and materials list to consultant in accordance with Section 01300 and CSA-S16.1.
- .2 On erection drawings, indicate all details and information necessary for assembly and erection purposes such as, description of methods, sequence of erection, type of equipment used in erection and temporary bracing.
- .3 Each drawing submission shall bear signature and stamp of qualified Professional Engineer registered or licensed in the Place of the Work for all fabricator-designed assemblies, components and connections.

PART 2 - PRODUCTS

2.1 Materials

- .1 Structural steel: to CSA-G40.21, Grade 350W, for rolled shapes and plates, Grade 350W for HSS members, Class H.
- .2 Anchor bolts: to ASTM A307.
- .3 Bolts, nuts and washers: to ASTM A325.
- .4 Welding materials: to CSA W48 Series CSA W59 and certified by Canadian Welding Bureau.
- .5 Hot dip galvanizing: galvanize steel to CAN/CSA-G164, minimum zinc coating of 600g/m².
- .6 Embedment anchors: Nelson Headed anchors with fluxed ends, or equivalent to the approval of the Consultant.

2.2 Fabrication

- .1 Fabricate all structural steel work as shown on drawings and specified herein, but not limited to, and including base plates, columns, beams, and girts, in accordance with CAN/CSA-S16.1 and in accordance with reviewed shop drawings.
- .2 Weld in accordance with CSA W47.1 and CSA W59.
- .3 Continuously seal members by using continuous welds. Grind smooth.
- .4 Unless otherwise indicated provide wall anchors including embedded steel plates, base plates, steel angle lintels, shelf angle for holding masonry, miscellaneous curb angles, and all other hardware to be embedded in concrete for steel members on concrete structure including anchor bolts and steel supports.
- .5 Nelson Studs shall be automatically end welded with suitable Nelson Stud welding equipment in the shop or field. All welds shall be made in accordance with Nelson Stud manufacturer's specifications.

2.3 Shop Painting

- .1 Clean, prepare surfaces and shop prime structural steel in accordance with CAN/CSA-S16.1, including surfaces to receive fire proofing.
- .2 Clean all members, remove loose mill scale, rust, oil, dirt and other foreign matter. Prepare surface according to SSPC SP7 (brush) blast.
- .3 Apply one coat of CISC/CPMA 1-73a primer in shop to all steel surfaces to achieve minimum dry film thickness of 75microns, except:
 - .1 Surfaces and edges to be field welded.
 - .2 Facing surfaces of slip critical connection.
 - .3 Below grade surfaces in contact with soil.
- .4 Apply paint under cover, on dry surfaces only and when surface and air temperatures are above 5°C.
- .5 Maintain dry condition and 5°C minimum temperature until paint is thoroughly dry.
- .6 Strip paint from bolts, nuts, sharp edges and corners before prime coat is dry.

PART 3 - EXECUTION

3.1 General

- .1 Do structural steel work in accordance with CAN/CSA-S16.1.
- .2 Do welding in accordance with CSA W59 and CSA W48 series.
- .3 Companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel structures and/or CSA W55.3 for resistance welding of structural components.
- .4 All exterior structural steel shall be hot-dip galvanized.
- .5 Setting of steel lintels in masonry by Section 04 21 00 04 22 00.

3.2 Marking

- .1 Mark materials in accordance with CSA-G40.20. Do not use die stamping. If steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection.
- .2 Match marking: shop mark bearing assemblies and splices for fit and match.

3.3 Erection

- .1 Erect structural steel, as indicated and in accordance with CAN/CSA-S16.1 and in accordance with reviewed erection drawings.
- .2 Obtain written approval of Consultant prior to field cutting or altering of structural members.
- .3 Install and tighten all structural bolts used for slip critical connection as per CAN/CSA S16.1.
- .4 Clean with mechanical brush and touch up shop primer to bolts, rivets, welds and burned or scratched surfaces at completion of erection.
- .5 Continuously seal members by continuous welds. Grind smooth.

3.4 Quality Control

- .1 Inspection and testing of materials to be arranged and paid by Owner under cash allowance.

3.5 Field Painting

- .1 Touch up all damaged surfaces and surfaces without shop coat with primer to CAN/CGSB-1.40, applied in accordance with CAN/CGSB 85.10.

End of Section

PART 1 – GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 References

- .1 ASTM A653/A653M-00; Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- .2 CSA S136-94 (R2001); Cold Formed Steel Structural Members.
- .3 CSA W59-M1989 (R2001); Welded Steel Construction, (Metal Arc Welding).
- .4 CAN/CGSB-1.181-99; Ready-Mixed Organic Zinc-Rich Coating.
- .5 CSSBI 10M-96; Steel Roof Deck.
- .6 CSSBI 12M-96; Composite Steel Deck.
- .7 CSA W47.1-92 (R2001); Certification of Companies for Fusion Welding of Steel Structures.
- .8 CSA W48-01; Filler Metals and Allied Materials for Metal Arc Welding.
- .9 CSA W55.3-1965 (R1998); Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.

1.3 Design Criteria

- .1 Design steel deck using limit states design in accordance with (Canadian Sheet Steel Building Institute) CSSBI 10M and CSSBI 12M.
- .2 Steel deck and connections to carry dead, live and other loads, shear diaphragm action lateral loads, composite deck action.
- .3 Deflection under specified live load not to exceed, live load deflection not to exceed 1/360th of span. Deflection under specified live load not to exceed 1/360th of span for floor deck.

1.4 Shop Drawings

- .1 Submit shop drawings erection and shoring drawings in accordance with Section 01 30 00.
- .2 Each drawing submission shall bear signature and stamp of qualified professional Engineer licensed in Place of the Work.
- .3 Submit design calculations to Consultant.
- .4 Indicate deck plan, profile, dimensions, base steel thickness, metallic coating designation, connections to supports and spacings, projections, openings, reinforcement details and accessories and design loads.

PART 2 – PRODUCTS

2.1 Materials

- .1 Zinc-iron Alloy (ZF) coated steel sheet: to ASTM A653/A653M structural quality Grade A, with Z275 coating, for interior surfaces not exposed to weather, unpainted finish, minimum 0.914mm base steel thickness. (See drawings for thickness.)
- .2 Closures: as recommended by manufacturer.
- .3 Cover plates, cell closures and flashings: steel sheet with minimum base steel thickness of 0.76mm. Metallic coating same as deck material.
- .4 Primer: zinc rich, ready mix to CAN/CGSB-1.181.

2.2 Types of Decking

- .1 Roof Deck: 38mm deep x 0.76mm minimum base steel thickness, cellular, interlocking sides, VicWest or equal, Z275 coating as specified herein. Refer to structural drawings, specifications and details.

PART 3 - EXECUTION

3.1 General

- .1 Design, detail, fabricate and erect in accordance with CAN/CSA-S136 and CSSBI 10M and CSSBI 12M.
- .2 Do welding in accordance with CSA W59 and CSA W48 Series.
- .3 Welding companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel decks and/or CSA W55.3 for resistance welding.

3.2 Erection

- .1 Erect steel deck in accordance with CSA S136 and CSSBI 10M and CSSBI 12M except as specified otherwise.
- .2 Butt ends: to 1.5mm to 3mm gap. Install steel cover plates over gaps wider than 3mm.
- .3 Lap ends: to 50mm minimum.
- .4 Weld and test stud shear connectors through steel deck to steel joists/beams below in accordance with CSA W59-M1989.
- .5 Immediately after deck is permanently secured in place, touch up metallic coated top surface with compatible primer where burned by welding.

3.3 Closures

- .1 Install closures in accordance with details, as indicated, to ensure effective closures against weather, thermal and acoustic effects.

.2 For details not indicated, follow manufacturer's recommendations.

3.4 Openings and Areas of Concentrated Loads

.1 No reinforcement required for openings smaller than 152mm square, cut in deck.

.2 Frame deck openings with any one dimension between 152 to 305mm as recommended by manufacturer, except as otherwise indicated.

.3 For deck openings with any one dimension greater than 305mm and for areas of concentrated load, reinforce in accordance with structural framing details, except as otherwise indicated. Use minimum C150 x 12 channels.

3.5 Connections

.1 Provide connections in accordance with CSSBI specifications.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 01 33 00 Submittal Procedures.
- .2 Section 01 83 00 Building Envelope Performance Requirements
- .3 Section 07 21 16 Blanket Insulation
- .4 Section 07 27 00 Air Barriers
- .5 Section 09 21 16 Gypsum Board

1.2 References

- .1 Codes and standards referenced in this section refer to the latest edition thereof.
- .2 American Society for Testing and Materials (ASTM)
 - .1 ASTM A653/A653 M- Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .2 ASTM A792/A792M- Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .3 Canadian Standards Association (CSA)
 - .1 CAN/CSA-G164, Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .2 CSA W55.3, Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.
 - .3 CSA W59, Welded Steel Construction (Metal Arc Welding) (Metric Version).
 - .4 CAN/CSA S136, North American Specification for the Design of Cold-Formed Steel Structural Members.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181-Ready-Mixed Organic Zinc-Rich Coating.
- .5 Canadian Sheet Steel Building Institute (CSSBI)
 - .1 CSSBI 52M- Lightweight Steel Framing Binder.
 - .2 CSSBI 55-04, Guide Specification for Wind Bearing Steel Studs.

1.3 Submittals

- .1 Engineered shop drawings with stamp by Professional Engineer licensed to practice in the Province of Ontario to be submitted for approval indicating design loads, member sizes, materials, design thickness exclusive of coatings, coating specifications, connection and bracing details, screw sizes and spacing, and anchors.
- .2 Indicate locations, dimensions, openings and requirements of related work.
- .3 Indicate welds by welding symbols as defined in CSA W59.
- .4 Submit samples of framing components and fasteners to Engineer/Architect.

1.4 Delivery, Storage and Handling

- .1 Protect steel studs during transportation, site storage and installation in accordance with CSSBI Sheet Steel Facts #3.
- .2 Handle and protect galvanized materials from damage to zinc coating.

PART 2 – PRODUCTS

2.1 Materials

- .1 Steel: to CSA S136, fabricated from ASTM A653/A653M, Grade 230 steel.
- .2 Zinc coated steel sheet: quality to A653M, with Z275 designation zinc coating.
- .3 Aluminum-zinc alloy coated steel sheet: to ASTM A792M, commercial quality, grade 37 with AZ180 coating, regular spangle surface, chemically treated for unpainted finish.
- .4 Welding materials: to CSAW59 and certified by Canadian Welding Bureau.
- .5 Screws: pan head, self-drilling, self-tapping sheet metal screws, corrosion protected to minimum requirements of CSSBI, (minimum coating thickness of 0.008 mm of zinc), length to suit application, but not less than 5.0 mm longer than twice the thickness of steel.
- .6 Anchors: concrete expansion anchors or other suitable drilled type fasteners.
- .7 Bolts, nuts, washers: hot dipped galvanized to CAN/CSA-G164, 600 g/m² zinc coating.
- .8 Touch up primer to repair damaged or cut metallic coatings: zinc rich, to CAN/CGSB 1-GP-181.

2.2 Steel Stud Designations

- .1 Colour code steel studs in accordance with CSSBI Technical Bulletin Vol. 7, No.2.

2.3 Metal Framing

- .1 Steel studs: to CSA S136, fabricated from zinc coated steel, depth as indicated. Minimum steel thickness of 1.52 mm. Steel thicknesses and track/stud widths to meet structural requirements and wall assembly dimensions noted on Architectural and Structural drawings.
- .2 Stud tracks : fabricated from same material and finish as steel studs, depth to suit.
 - .1 Bottom track: single piece.
 - .2 Top track: single piece.
 - .3 Slotted top track: single piece, to be installed at underside of structural steel members subject to load deflection and exterior wall assemblies.
- .3 Bridging: fabricated from same material and finish as studs, 38 x 12 x 1.22 mm minimum thickness.
- .4 Angle clips: fabricated from same material and finish as studs, 38 x 38mm x depth of steel stud, 1.22 mm minimum thickness.
- .5 Tension straps and accessories: as recommended by manufacturer.

2.4 Source Quality Control

- .1 Prior to commencement of work, submit:
 - .1 Two certified copies of mill reports covering material properties.

PART 3 – EXECUTION

3.1 General

- .1 Do welding in accordance with CSA W59.
- .2 Companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel structures and/or CSA W55.3 for resistance welding of structural components.
- .3 Do work in accordance with CSSBI S5.

3.2 Erection

- .1 Erect components to requirements of Consultant reviewed Engineer stamped shop drawings.
- .2 Anchor tracks securely to structure at 800 mm oc maximum, unless lesser spacing prescribed on shop drawings.
- .3 Erect studs plumb, aligned and securely attached with two screws minimum, or welded in accordance with manufacturer's recommendations.
- .4 Seat studs into bottom tracks and single piece top track. Gap between end of stud and web of track not to exceed 4.0 mm. Secure studs with two (2) screws minimum (in top and bottom tracks), or in accordance with manufacturer's recommendations. Slotted top tracks to be used at underside of steel beams and at all exterior wall assemblies to allow for structural load deflection.
- .5 Install studs at not more than 50.0 mm from abutting walls, openings, and each side of corners and terminations with dissimilar materials.
- .6 Brace steel studs with horizontal internal bridging at 1200 mm maximum. Fasten bridging to steel clips fastened to steel studs with screws or by welding.
- .7 Frame openings in stud walls to adequately carry loads by use of additional framing members and bracing as detailed on shop drawings.
- .8 Install masonry ties at stone veneer locations at exterior steel stud walls with two #10-16 x 13 lg. Tek screws per tie.
- .9 Install mineral wool batt insulation at all steel stud assemblies having concealed voids inaccessible after installation.
- .10 Install supplementary framing, blocking, and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations.
- .11 Frame wall openings larger than 600 mm square with double stud at each jamb of frame, except where more than two studs are either shown or indicated in manufacturer's instructions.
 - .1 Install runner tracks and jack studs above door openings, and above and below wall openings.
 - .2 Anchor tracks to jamb studs with stud shoes or by welding, and space jack studs same as full-height studs of wall.
 - .3 Secure stud system wall opening frame in manner indicated.
- .12 Touch up welds with coat of zinc rich primer.

3.3 Erection Tolerances

- .1 Plumb: not to exceed 1/500th of member length.
- .2 Camber: not to exceed 1/1000th of member length.
- .3 Spacing: not more than 3.0 mm from design spacing.

.4 Gap between end of stud and track web: not more than 4.0 mm.

3.4 Cutouts

.1 Maximum size of cutouts for services as follows:

| Member Depth | Across Member Depth | Along Member Length | Centre to Centre Spacing (mm) |
|--------------|---------------------|---------------------|-------------------------------|
| 92 | 40 max. | 105 max. | 600 min. |
| 102 | 40 max. | 105 max. | 600 min. |
| 152 | 65 max. | 115 max. | 600 min. |

.2 Limit distance from centerline of last unreinforced cutout to end of member to less than 300 mm.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 06 20 00 Finish Carpentry
- .2 Section 07 51 13 Built-up Bituminous Roofing

1.2 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.3 Source Quality

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.

1.4 Shop Drawings

- .1 Submit shop details and erection drawings in accordance with Section 01340.
- .2 Each drawing submitted shall bear the signature and stamp of qualified professional engineer registered in province of Ontario.
- .3 In erection drawings, indicate joist mark, depth, spacing, bridging lines, bearing and anchorage details.
- .4 In shop details, provide particulars relative to joist geometry, framed openings, bearing and anchorage. Include member size, properties and bracing requirements.
- .5 Reproduction of contract drawings for use as erection drawings is not permitted.

PART 2 - PRODUCTS

2.1 Lumber Material

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
 - .1 CSA O80 Series – 97, Wood Preservation.
 - .2 CSA O121 - M1978 (R1998), Douglas Fir Plywood.

- .3 CAN/CSA O141 - 91 (R1999), Softwood Lumber.
 - .4 CSA O151 - M1978 (R1998), Canadian Softwood Plywood
 - .5 CSA O153 – M1980 (R1998), Poplar Plywood
 - .6 CSA O437 Series – 93, Standards on OSB and Waferboard
 - .7 National Lumber Grading Authority (NGLA), Standard Grading Rules for Canadian Lumber, Latest edition.
- .2 Machine stress-rated lumber is acceptable for all purposes.
 - .3 Framing and board lumber: in accordance with OBC 1997 Subsection 9.3.2, except as follows:
 - .1 Spruce-Pine-Fir species, standard construction grade, S-dry.
 - .4 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, and sleepers:
 - .1 Spruce-Pine-Fir species.
 - .2 Board sizes: "Standard" or better grade.
 - .3 Dimension sizes: "Standard" light framing or better grade.
 - .5 Wood curbs:
 - .1 Spruce-Pine-Fir species, pressure treated with preservative.
 - .2 Dimensions as indicated on drawings.

2.2 Panel Materials

- .1 Provide panel products manufactured with phenol-formaldehyde or formaldehyde-free adhesives.
- .2 Canadian Softwood Plywood: to CSA 0151.
- .3 Douglas Fir Plywood (DFP): to CSA 0121., good one side, square edge, 19mm
- .4 Poplar Plywood: to CSA 0153, standard construction.
- .5 Oriented Strand Board: to CSA 0437.0.
- .6 Underlayment: Douglas Fir plywood, exterior, sanded grade, G1S, wood inlay patches only, plugged crossbands.

2.3 Fasteners

- .1 Nails, spikes and staples: to CSA B111-1974.
- .2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.
- .4 Galvanizing: to CSA G164-M92, use galvanized fasteners for exterior work interior highly humid areas and fastening pressure-preservative treated lumber.

2.4 Wood Preservative

- .1 Pressure treatment in accordance with CSA O80 Series-M89 Series-M89 Series-M89. Preservative shall be chromated copper arsenate (CCA).
- .2 Surface-applied wood preservative for finishing pressure treated wood exposed by cutting, trimming or boring: copper naphthenate or 5% pentachlorophenol solution, water repellent preservative.

PART 3 - EXECUTION

3.1 General

- .1 Comply with requirements of OBC 1990 Part 9 supplemented by following paragraphs.
- .2 Do not regard drawings as exact or complete for nailers, blocking or other fastening provisions.
- .3 Lay out all items to be installed by this Section carefully to suit requirements of all other Sections.

3.2 Erection of Framing Members

- .1 Install members true to line, levels and elevations, plumb, square and level, secured permanently in place.
- .2 Construct continuous members from pieces of longest practical length.
- .3 Join members only over solid backing.

3.3 Furring and Blocking

- .1 Install furring and blocking as required to space-out and support millwork, mechanical and electrical items and other work as required.
- .2 Install pressure treated 38 x 89 wood blocking at cavity wall locations detailed on drawings, at doors and windows as detailed. Lag wood blocking to masonry block at 800mm OC (maximum). Wood blocking to be installed in cavity wall before the cavity wall air vapour barrier is installed. Provide double pressure treated 38 x 89 at jambs and tops of all windows and as detailed on drawings.

3.4 Blocking in Metal Stud Framing

- .1 Install 38 x 89 wood blocking horizontally the full width between metal studs, screwed through the metal stud. Screw fasten 38 x 184 wood blocking furring vertically to the face of the 38x89 horizontal blocking with #10 wood screws @ 200mm OC (maximum). Screw fasten the 38x184 blocking to the metal studs to prevent twisting of the blocking within the wall cavity. All wood blocking to be purpose cut to fit exact and tight to the adjacent metal stud.
- .2 Install wood blocking at locations where all items of this trade or other trades are attached to the wall surface such as; millwork cabinets and bookcases, washroom accessories such as grab bars and mirrors, coat hook racks and shelves, mechanical items such as urinals or support brackets for pipes and fittings, electrical items such as surface mounted or recessed hand dryers.
- .3 Co-ordinated location and height of wood blocking with trade/items requiring backing support for attachment. Provide blocking at each attachment point required by items needing support blocking.
- .4 Co-ordinate with all trades to ensure no interference is created by installation of wood blocking. Where installation of blocking interferes with work of another trade obtain Consultant's approval of alternate blocking detail.

3.5 Nailing Strips, Grounds and Rough Bucks

- .1 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

3.6 Fasteners

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.
- .3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.7 Wood Preservative

- .1 The following lumber and plywood shall be pressure treated with preservative:
 - .1 Wood cants, curbs, insulation stops, blocking and nailers in connection with roof construction; wood posts and wood curbs in connection with site work, cants, curbs, blocking and nailers in contact with floor slab.
 - .2 Treat surfaces of lumber and plywood exposed by cutting, trimming or boring with surface applied wood preservative, before installation.
 - .3 Apply preservative to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.

3.8 Electrical Equipment Backboard

- .1 Provide and install backboards for mounting electrical and communication equipment. Use 19 mm thick Douglas Fir plywood with ULC label (FRTW) on 19 x 38 mm furring around perimeter and at maximum 300 mm intermediate spacing.
- .2 Install backboards and furring only after they have been finish painted on all surfaces (including sides and back) in accordance with Section 09 90 00.
- .3 Install backboards using screw fasteners.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 08 11 10 Steel Doors and Frames
- .2 Section 08 71 00 Finish Hardware

1.2 Reference Standards

- .1 Do finish carpentry to Millwork Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC) current edition, Custom Grade, except where specified otherwise.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Product Delivery, Storage and Handling

- .1 Protect materials against dampness during and after delivery.
- .2 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

PART 2 - PRODUCTS

2.1 Lumber Material

- .1 Softwood lumber: unless specified otherwise, S4S, moisture content 8% or less in accordance with following standards:
 - .1 CAN/CSA-O141-91.
 - .2 NLGA Standard Grading Rules for Canadian Lumber, 1987.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Hardwood lumber: moisture content 8% or less in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA), January 1982.
 - .2 Species: Maple, Ash, AWMAC Custom Grade, of uniform grain and colour, sizes as indicated on drawings.

2.2 Fasteners

- .1 Nails and staples: to CSA B111-1974.
- .2 Wood screws: to CSA B35.4-72.
- .3 Toggle bolts, expansion shields and lag bolts, screws and lead shields, recommended for purpose by manufacturer. Use toggle bolts for fastening to hollow masonry and panel material. Use bolts or screws in lead expansion shields for fastening to solid masonry and concrete.
- .4 Galvanizing: to CSA G164-M92. Use galvanized fasteners for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.

2.3 Cabinetwork

- .1 Refer to drawings for scope of work for cabinet modification for new plumbing fixtures.

PART 3 – EXECUTION

3.1 Workmanship

- .1 Take site measurements of construction to which finish carpentry installations must conform, and through which access must be made, before fabricated units are delivered to site, to ensure that adaptation is not required which would result in construction delay.
- .2 Do not regard drawings as exact or complete for nailers, blocking or other fastening provisions.
- .3 Lay out all items to be installed by this Section carefully to suit requirements of all other Sections.
- .4 Install finish carpentry plumb, level and straight, and fasten it securely to backing to support itself and anticipated superimposed loads.
- .5 Build finish carpentry into construction as indicated on drawings or specified in other Sections of the Specifications, or both.
- .6 Scribe and cut as required to fit abutting walls, and surfaces, to fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.
- .7 Form joints to conceal shrinkage.
- .8 Install trim in single lengths except where material limitation makes impossible. Stagger joints where they occur and locate over solid backing for fastening.
- .9 Cut mouldings and trim with sharp true profiles.
- .10 Cope trim and mouldings at interior corners and at returns. Mitre trim and mouldings at exterior corners.
- .11 Scribe and join members accurately together, and to other surfaces, to fit tightly and with flat smooth surfaces. Install trim or filler panels to close gaps.

3.2 Fastening

- .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor

securely.

- .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
- .3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round cleanly cut hole and plug with wood plug to match material being secured.
- .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

3.3 Installation of Doors

- .1 Install hollow steel doors supplied by Section 08 11 10.

3.4 Finish Hardware

- .1 Install finish hardware supplied by Section 08 71 00 as specified and in accordance with manufacturer's instructions.
- .2 Adjust hinged doors to swing freely and easily, to remain stationary at any point of swing, to close evenly and tightly against stops without binding, and to latch positively when doors are closed with moderate force. Ensure that when doors are installed with hinged stiles adjacent, both doors can open simultaneously without binding.
- .3 Adjust hardware so that latches and locks operate smoothly and without binding, and closers act positively with the least possible resistance in use. Lubricate hardware if required by supplier's instructions.
- .4 Ensure that doors equipped with closers operate to close doors firmly against anticipated wind and building air pressure, and to enable doors to be readily opened as suitable for function, location and traffic.
- .5 Finish hardware installer to have a minimum 5 years experience directly related to hardware specified. Submit resume of related experience to hardware supplier for approval. Hardware supplier will inspect workmanship on hardware installer periodically to confirm necessary skills.

3.5 Cabinetwork

- .1 Remove, modify and reinstall existing cabinetwork in accordance with best practice by skilled craftsmen specializing in work specified and to requirements of other trades. Refer to drawings for scope of work for cabinet reworking.
- .2 Take field dimensions and fabricate work to suit field dimension.
- .3 Use running members in greatest lengths obtainable.
- .4 Machine dressed work shall be slow fed using sharp cutter and finished members shall be free from drag, feathers, slivers or roughness of any kind. Remove machine marks by sanding.
- .5 In finished work machine sand exposed surfaces in shop and hand sand on job to even smooth surfaces, free from scratches, ready for finishing.
- .6 Frame materials with tight joints rigidly held in place. Use glue blocks where necessary.
- .7 Provide all filler panels as required. Top and bottom filler panels must be provided where front face filler panels are installed.

- .8 Conceal joints and connections wherever possible. Intermediate joints between supports not permitted.
- .9 Glue, blind screw or nail all work unless otherwise specified. Set surface nails and plug surface screws with wood plugs of material to match surface.
- .10 Finished woodwork shall be free from bruises, blemishes, mineral marks, knots, shakes and other defects and shall be selected for colour, grain and texture. Finishing of maple skirt: Formula 8 in Section 09 90 00. All edges to be sanded pencil round, as detailed. Unit to be prefinished at place of fabrication prior to shipping to site, all edges and surfaces to be finished.
- .11 Be responsible for methods of construction and for ensuring that materials are rigidly and securely attached and will not be loosened by work of other trades.

End of Section

PART 1 - GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Section Includes

- .1 Provision of all labour, materials, equipment and incidental services necessary to provide batt and blanket insulation.

1.3 References

- .1 CSA-B111-1974 (R1998); Wire Nails, Spikes and Staples.
- .2 CAN/ULC-S102-1998 (R2000); Surface Burning Characteristics of Building Materials and Assemblies.
- .3 CAN/ULC-S114-1980 (R1997); Determination of Non-Combustibility in Building Materials.
- .4 CAN/ULC-S702-97; Standard for Mineral Fibre Thermal Insulation for Buildings.

PART 2 – PRODUCTS

2.1 Acceptable Manufacturers

- .1 Owens Corning Canada
- .2 Roxul Inc.
- .3 Fibrex Insulations Inc.
- .4 Johns-Manville Canada Inc.
- .5 Thermafiber, Inc.

2.2 Insulation

- .1 Batt and Blanket Insulation for Exterior Wall Assemblies: mineral fibre processed from rock, slag, to CAN/ULC-S702, Type 1. Provide appropriate widths for steel stud locations and as noted on wall type legend and architectural details. Thicknesses as shown on the drawings.
 - .1 Roxul PLUS or approved equal from acceptable manufacturers.

PART 3 - EXECUTION

3.1 Installation

- .1 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .2 Where no means of securing is present, retain insulation in position with insulation clips, installed as recommended by manufacturer. Insulation clips shall be spaced 400mm vertically.
- .3 Fit insulation closely around electrical boxes, pipes, ducts, frames, and other objects in or passing through insulation.
- .4 Do not compress insulation to fit into spaces.
- .5 Keep insulation minimum 75mm away from heat emitting devices such as recessed light fixtures.
- .6 Do not enclose or build over insulation until it has been inspected and approved by Consultant.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 03 30 00 Cast-in-place Concrete
- .2 Division 15 Insulation For Mechanical Work

1.2 Samples

- .1 Submit samples in accordance with Section 01340.

1.3 Storage and Handling

- .1 Provide and maintain dry, off-ground weatherproof storage.
- .2 Store materials on supports to prevent deformation.
- .3 Remove only in quantities required for same day use.
- .4 Store materials in accordance with manufacturers written instructions.
- .5 Store insulation protected from sunlight and weather and deleterious materials.

PART 2 - PRODUCTS

2.1 Board Insulation.

- .1 Foundation Insulation Application: extruded closed-cell polystyrene to CAN/ULCS701, Type 4, square edges,

- Locations:
- 1. Interior of perimeter foundation walls, below concrete slab to min. 600mm below exterior grade.
 - 2. Below concrete slab at building perimeter as indicated on drawings thickness as shown on the drawings,

- .1 Board size: 610mm x 2440mm x 75mm thick.
- .2 Compressive strength: 210kPa.
- .3 Flame Spread: less than 50, to CAN/ULC-S102.
- .4 Vapour Permeance: 60ng/Pa s m² maximum.
- .5 Dimensional stability: 1.5% maximum linear change at 70°C and 97% relative humidity for 7 days.
- .6 Curing Time: minimum 24 hours, plus 24 hours per 25mm of thickness before shipment from manufacturer.
- .7 Long Term Thermal Resistance (LTTR)
 - .1 RSI 0.87 for 25mm thickness of board.
 - .2 RSI 1.84 for 50mm thickness of board.
 - .3 RSI 2.81 for 75mm thickness of board.

- .8 Acceptable Products;

- .1 STYROFOAM SM, Type 4 by Dow Chemical Canada Inc., or
- .2 CELFORT 300, by Owens-Corning Canada Inc.

2.2 Vapour Barrier

- .1 Vapour barrier: polyethylene film to CAN/CGSB-51.34-M86, 0.15 mm thick.
- .2 Sealant for sealing vapour barrier joints: non-hardening, non-drying, permanently flexible sealant to CAN/CGSB-19.21-M87; Tremco Acoustical Sealant 931-70X, or equal.

2.3 Insulation Adhesive

- .1 Type A: to CGSB 71-GP-24M, Adhesive, Flexible, for Bonding Cellular Polystyrene Insulation.

2.4 Mechanical Fasteners

- .1 Nails: galvanized steel concrete nails, Tapcon concrete fasteners, length minimum 25 mm longer than insulation thickness, CSA B111-1974 Table 12.

2.5 Adhesive Applied Fasteners

- .1 Zinc coated steel stik-clips to suit insulation thickness as manufactured by Eckel Industries.

PART 3 - EXECUTION

3.1 General

- .1 Do not enclose or build over insulation until it has been inspected and approved by Consultant.
- .2 Install insulation after building substrate materials are dry. Install insulation only in areas authorized/approved by Consultant.
- .3 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .4 Cut and trim insulation neatly to fit and fill spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
- .5 Install materials in accordance with manufacturer's instructions.
- .6 Leave rigid insulation board joints unbonded over line of expansion and control joints. Bond a continuous 150 mm wide 0.15 mm polyethylene strip over expansion and control joints using compatible adhesive before application of insulation.

3.2 Perimeter Foundation Insulation

- .1 Interior application: extend boards vertically below bottom of finish floor slab, installed on inside face of perimeter foundation walls, to depth indicated on drawings, but not less than 600 mm below finish grade.
- .2 Under slab application: Lay boards on level compacted fill in locations indicated on drawings. Depress fill under areas to receive underslab insulation to maintain minimum 200 mm granular thickness.

- .3 Use Type A adhesive with dab method or use nails to hold insulation in place until backfill material is placed.

3.3 Below Slab Insulation

- .1 Perimeter Under slab application: Lay boards over vapour barrier on level compacted fill in locations indicated on drawings. At building perimeter extend boards horizontally below bottom of finish floor slab, installed to 600 mm from interior face of perimeter foundation walls, where indicated on drawings.
- .2 Depress fill under areas to receive underslab insulation to maintain minimum 200 mm granular thickness.

End of Section

PART 1 - GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Section Includes

- .1 Provision of all labour, materials, equipment and incidental services necessary to provide all spray-in-place foam insulation.

1.3 References

- .1 ASTM E283; Rate of Air Leakage Through Exterior Windows Curtain Walls and Doors.
- .2 CAN/ULC-S102; Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
- .3 CAN/ULC-S705.1; Thermal insulation - Spray-Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
- .4 CAN/ULC-S705.2; Thermal insulation - Spray-Applied Rigid Polyurethane Foam, Medium Density, Installer's Responsibilities Specification.
- .5 CAN/ULC-S770; Determination of Long Term Thermal Resistance of Closed Cell Thermal Insulating Foams.

1.4 Quality Assurance

- .1 Applicator Qualifications
 - .1 Work of this section shall be performed by applicators having a minimum of 2 years documented experience in the installation of spray-in-place foam insulation. Submit proof of experience to Consultant.
- .2 Installation
 - .1 Work shall be performed in strict accordance with manufacturer's printed instructions, and in accordance with all warranty requirements.

1.5 Delivery, Storage and Handling

- .1 Materials shall be delivered to jobsite in original and clearly marked containers with

manufacturer's labels and seals intact.

- .2 Store solvent base liquids away from excessive heat and open flame, at above freezing temperatures, and free from contact with cold or frozen surfaces.
- .3 Do not double stack pallets of materials. Provide cover and adequate ventilation.

1.6 Test Results

- .1 Submit copies of all performance test results, as performed by an independent testing laboratory, in accordance with Section 01 30 00.

1.7 Mock-Up

- .1 Construct mock-up of 10m² minimum, of spray-in-place foam insulation including one inside corner and one outside corner. Mock-up may be part of finished work.
- .2 Allow 24 hours for inspection of mock-up by Consultant before proceeding with insulation work

1.8 Environmental Requirements

- .1 Provide protection and environmental controls in accordance with Section 01 50 00, and CAN/ULC-S705.2.
- .2 Ventilate areas to receive insulation, in accordance with Section 01 50 00, by introducing fresh air and exhausting air continuously during, and for 24 hours after application to maintain non-toxic, unpolluted, safe working conditions.
- .3 Provide temporary enclosures to prevent spray and noxious vapours from contaminating air beyond application area.
- .4 Protect workers as recommended by insulation manufacturer. Applicator must wear appropriate breathing apparatus, safety goggles, and other protective clothing and equipment.
- .5 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.
- .6 Apply insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.
- .7 Dispose of waste foam daily in location designated by Consultant and decontaminate empty drums in accordance with foam manufacturer's instructions.

PART 2 - PRODUCTS

2.1 Materials

- .1 Insulation: spray-applied rigid polyurethane foam to CAN/ULC-S705.1;
 - .1 Compressive strength: 174kPa,
 - .2 Flame spread rating: less than 500 to CAN/ULC-S102,
 - .3 Air leakage of less than 0.001 L/s/m² at 75Pa to CAN/ULC-S705.1, for 25mm

- thickness of board,
- .4 Water Vapour Permeance: 86.6 ng/Pa.s.m², and
- .5 Long Term Thermal Resistance (LTTR) of minimum;
 - .1 1.05m² °C/W for 25mm thickness of board.
- .6 Acceptable Products;
 - .1 WALLTITE, by BASF Canada Inc.
 - .2 HEATLOK 0240, by Demilec/Cornell Group.
 - .3 Approved equal meeting product specifications listed herein.
- .2 Primers: in accordance with manufacturers recommendations for surface conditions.
- .3 Ensure compatible of all substrates to come into contact with spray applied polyurethane foam.

PART 3 – EXECUTION

3.1 Examination

- .1 Verify that all surfaces to receive spray-in-place insulation are clean and free of all frost, oil, rust, or deleterious materials.
- .2 Verify that all environmental conditions required for successful application of materials, can be met.
- .3 Report in writing, any defects in surfaces or conditions which may adversely affect the installation or performance of the products provided under this section.

3.2 Preparation

- .1 Mask all adjacent surfaces not to receive spray-in-place insulation which may be damaged or stained by insulation installation.
- .2 Apply primers where recommended by insulation manufacturer.

3.3 Application

- .1 Apply insulation to clean surfaces in accordance with CAN/ULC-S705.2 and manufacturer's printed instructions in areas detailed on drawings.
- .2 Apply insulation in consecutive passes to thickness scheduled herein.
- .3 Finished surface of foam insulation shall be free of voids and imbedded foreign objects.
- .4 Finished installation shall be inspected and approved by Consultant prior to concealment.

End of Section

PART 1 - GENERAL

1.1 Section Includes

- .1 Provision of all labour, materials, equipment and incidental services necessary to provide complete air/vapour barrier membrane, including the following:
 - .1 Preparation of substrates for installation of membrane,
 - .2 Installation of membrane, and
 - .3 Installation of all periphery detailing around all interruptions in, penetrations through, and terminations of membrane.

1.2 References

- .1 ASTM C920-01; Standard Specification for Elastomeric Joint Sealants.
- .2 ASTM D412-98a; Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers -Tension.
- .3 ASTM D882-00; Test Methods for Tensile Properties of Thin Plastic Sheeting.
- .4 ASTM E96-00; Test Methods for Water Vapor Transmission of Materials.
- .5 ASTM E283-91(1999); Test Method for Determining the Rate of Air Leakage Through Exterior Windows Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
- .6 ASTM E1677-95; Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls.

1.3 Quality Assurance

- .1 Applicator Qualifications
 - .1 Work of this section shall be performed by applicators having a minimum of 2 years documented experience in the installation of air barriers. Submit proof of experience to Consultant.
- .2 Installation
 - .1 Work shall be performed in strict accordance with manufacturer's printed instructions, and in accordance with all warranty requirements.

1.4 Delivery, Storage and Handling

- .1 Deliver all products to the site in manufacturer's original unopened packages with all labels intact.
- .2 Store materials in such a manner so as to protect them from precipitation, ground moisture, and temperature extremes. Raised platforms, waterproof coverings or interior storage shall be employed when and where necessary.

1.5 Environmental Requirements

- .1 Do not install solvent curing sealants or vapour release adhesive materials in enclosed spaces without ventilation.

- .2 Maintain temperature and humidity recommended by materials manufacturers before, during and after installation.
- .3 Concrete block substrates shall be cured for a minimum of seven (7) days prior to application of air/vapour barrier products. Concrete substrates shall be cured for a minimum of fourteen (14) days prior to application of air/vapour barrier products. All substrates shall be allowed to dry a minimum of 24 hours following any precipitation.

1.6 Coordination

- .1 Coordinate work of this Section with all related Sections.
- .2 Sequence work to permit installation of materials in conjunction with related air/vapour seals.
- .3 Schedule work such that insulation or building veneer installation follows as closely as possible the installation of the air barrier system so as to minimize exposure.

PART 2 – PRODUCTS

2.1 Air Barrier Membranes

- .1 Breathable Membrane/ Moisture Barrier Sheet-Applied, Vapor Permeable Water Resistive Air Barrier (Basis of Design):
 - .1 Self-adhered vapor permeable, water resistive air barrier consisting of a reinforced, modified polyolefin tri-laminate film surface and patented permeable adhesive technology with split-back poly-release film; having the following typical physical properties:
 - .1 Basis of design: Henry® Blueskin® VP160 Self-Adhered Water Resistive Air Barrier
 - .2 Color: Blue
 - .3 Thickness: 23 mils (0.58 mm)
 - .4 Water Vapor Permeance (ASTM E96): 29 perms
 - .5 Air Leakage of Air Barrier Assemblies (ASTM E2357): Pass
 - .6 Air Permeance (ASTM E2178): Pass
 - .7 Nail Sealability (ASTM D1970): Pass
 - .8 Dry Tensile Strength (ASTM D882):
 1. 41 lbf /182N MD
 2. 29 lbf /129N CD
 - .2 Primer: synthetic rubber-based, adhesive type.
 - .3 Sealant: Bakor Polybitume, or Rub-R-Wall Airtight mastic.

PART 3 - EXECUTION

3.1 General

- .1 Examine all substrates to receive air barrier system, to ensure they are suitable for installation to commence. Report any unsatisfactory conditions in writing to the Contractor prior to commencement of the installation.
- .2 Surfaces shall be clean, dry, continuous and be free of voids, excessive gaps and foreign

matter that would impair the adhesion or regularity of the air barrier installation.

- .3 Tape joints in sheathing boards, and fill cracks in masonry or concrete with mastic.

3.2 Preparation

- .1 Clean and prime substrate surfaces to receive air barrier in accordance with manufacturer's instructions.

3.3 Installation

- .1 Apply transition membranes to span all dissimilar substrate materials and around perimeters of all doors, windows, and other openings in building envelope. Minimum lap shall be 76mm on both substrates. Unroll into place, applying hand pressure only. Do not roll using pressure roller. Minimum end and side laps shall be 50mm.
- .2 Apply trowel grade product at all membrane penetrations where air barrier continuity has been compromised and not meeting these specifications.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Divisions 15 and 16

1.2 Scope of Work

- .1 Supply and install all exterior metal siding and soffits as detailed on drawings and specified herein.

1.3 References

- .1 CSA B35.3-62 Tapping and Drive Screws (Slotted and Recessed Head, Thread Forming and Thread Cutting Screws, and Metallic Drive Screws).
- .2 CAN/CGSB-93.5-92 Siding, Soffits and Fascia
- .3 ASTM A 446/A 446M-93 446M-93 Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical Quality).

1.4 Samples

- .1 Submit samples in accordance with Section 01340.
- .2 Submit duplicate 300 mm x 300 mm samples of siding material, of colour and profile specified.

1.5 Protection

- .1 Handle and protect materials from damage. During storage, space surfaces of galvanized materials to permit free circulation of air.

1.6 Mock-up

- .1 Provide a mock-up using specified products and manufacturer approved installation methods for evaluation of installation techniques and workmanship.
- .2 Mockup shall include typical panel to panel and panel to adjacent surfaces with both horizontal and vertical joint conditions.
- .3 Locate where directed and approve by the Architect.
- .4 Approved mock-up may remain as part of finished work.

PART 2 - PRODUCTS

2.1 Metal Flashings

- .1 Prefinished Sheet Metal: for flashings & copings, 0.7mm minimum base thickness commercial quality sheet steel to CSA-S136, hot-dip galvanized to CAN/CSAG164, prefinished with factory applied 2-coat silicon-modified polyester system, Stelco 8000 Series finish; colour as selected by Consultant.
- .2 Miscellaneous Sheet Metal: for hook strips, fastening strips, metal bellows, and other flashings generally concealed from view; 0.93mm galvanized steel.

2.2 Metal Soffits

- .1 Prefinished formed steel panels, 0.61 mm nominal thickness, preformed with grooves, fully vented, colour selected by Consultant from 8000 Series standard colour range, fasteners to match panel colour. Panel to be as per Vicwest AD300SR or approved equal.
- .2 Panel finish: Vicwest Expressence Series, Dark Cedar 18-9875.
- .3 Trim and coping: to match soffit system.
- .4 Sub-girts: 1.2mm zinc coated steel, to ASTM A525 with Grade A coating to ASTM Z275.
- .5 Flashings: base, window head, metal closure, and similar flashings to match cladding system.
- .6 Fasteners: self-tapping s.s screws to CSA B35.3-1962, purpose made, colour matched to soffit.
- .7 Panels fabricated by to suit soffit as detailed, in accordance with specifications and approved shop drawings.

PART 3 - EXECUTION

3.1 Examination

- .1 Review drawing details and note different material and installation requirements for both pre-finished aluminum and steel siding products and prefinished steel soffits as specified herein.
- .2 Verify substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.
- .3 Verify dimensions, tolerances, and method of attachment with other work on-site.
- .4 Notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with erection until unsatisfactory conditions have been corrected.

3.2 Installation

- .1 Install in compliance with manufacturer's product data, including product technical bulletins, application and installation instructions.
- .2 Erect panels in accordance with reviewed shop drawings; anchor panels securely in accordance with reviewed shop drawings to allow for necessary thermal movement and structural support.
- .3 Erect metal work square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- .4 Provide suitable means of anchorage acceptable to panel manufacturer such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
- .5 Exposed fastening devices are not acceptable. Concealed fasteners are to be compatible with material through which they pass.
- .6 Erect panels in accordance with reviewed shop drawings.

- .7 Anchor panels securely per engineering recommendations and in accordance with approved shop drawings to allow for necessary thermal movement and structural support.
- .8 Conform to manufacturer's instructions for installation of concealed fasteners.
- .9 Do not install component parts that are observed to be defective, including warped, bowed, dented, abraded and broken members.
- .10 Do not cut, trim, weld or braze component parts during erection in manner that would damage finish, decrease strength, or result in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.
- .11 At flashing butt joints, provide a lap strap under flashing and seal lapped surfaces with a full bed of non-hardening sealant.
- .12 Separate dissimilar metals and use gasketed fasteners, isolation shim, or isolation tape where needed to eliminate possibility of corrosive or electrolytic action between metals.
- .13 A maximum deviation from vertical and horizontal alignment of erected panels: 8.5 mm in 8500 mm, non-accumulative. Maximum offset from true alignment between two adjacent members abutting end to end, in line: 0.76 mm. Maximum variation from plane or location shown on shop drawings: 12.7 mm in 9.1 m of length and up to 19.1 mm in 91.4 m.
- .14 Install head and sill flashings, edge trim, cap pieces and other metal profiles as applicable and/or detailed.
- .15 Obtain panel symmetry in both vertical and horizontal plane whenever possible.
- .16 Install metal trims, and vents where indicated on drawings to manufacturer's instructions. Conceal fasteners where possible. Exposed fasteners to be colour matched to adjacent material colour. All soffit metal trim components to match soffit colour.

3.3 Adjusting and Cleaning

- .1 Clean installed products in accordance with AAMA 610.1 and manufacturer's instructions before owner's acceptance.
- .2 Remove masking film (if used) as soon as possible after installation. Remove temporary coverings in accordance with the manufacturers instructions. Repair or replace damaged installed products.
- .3 Remove from project site and legally dispose of construction debris associated with this work.
- .4 Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.
- .5 Protect installed products and finished surfaces from damage during construction.

End of Section

PART 1 – GENERAL

1.1 Section Includes

- .1 Work of this Section shall include 3mm aluminum panels installed as dry system, no exposed sealants to cover walls and soffits as detailed on drawings.

1.2 References

- .1 AAMA 2603, Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
- .2 AAMA 2605, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels - Series: Components, Coatings and Finishes.
- .3 CAN/CGSB-19.24-M: Multi-Component, Chemical Curing Sealing Compound.
- .4 CAN/CGSB-51.10-92: Mineral Fibre Board Thermal Insulation.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.5 Engineering Design

- .1 Employ a professional structural engineer registered in the Province of the Place of the Work, to engineer the work of this Section requiring structural performance and to be responsible for determining sizes, spacing and loading of components in accordance with applicable codes and regulations. This structural engineer shall stamp and sign the shop drawings and ensure installation compliance with the engineering design.
- .2 Design metal panels and soffits to allow thermal movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects.
- .3 Provide for expansion and contraction of building structure within the metal panels and soffits, to prevent permanent distortion damage, racking of joints, breakage of seals, or wind and water penetration.
- .4 Design metal panels and soffits structurally strong and therefore capable as the wall enclosure. Product to withstand the air pressure difference (Design Wind Load).
- .5 Design assemblies, including attachments, to accommodate profile and shape of building, as detailed, with allowances for construction tolerances of structure, and to ensure compatibility between all Products including attachments.

- .6 Design use of shims or spacers to accommodate erection tolerances, both static and dynamic building tolerances and movements, without detrimental effect on structural integrity of the connection.

1.6 Submittals

- .1 Shop drawings: Show thicknesses, profiles, finishes, installation and jointing details, sealant and Interfacing with adjacent work
- .2 Samples: Submit 300 mm x 300 mm samples of each type of prefinished metal wall panels and soffits in colours specified.

1.7 Quality Assurance

- .1 Work of this Section shall be designed and fabricated by a company that has a minimum of 10 years experience in successful completion of projects of similar size.
- .2 Installers must be authorized by the metal panel manufacturer and must have completed projects of similar size. Employ only qualified installers with proven experience in this type of work.

1.8 Delivery, Storage and Handling

- .1 Protect panel and soffit finish and edges in accordance with manufacturer's recommendations.
- .2 Deliver Products to the Place of the Work undamaged.
- .3 Store Products in accordance with panel manufacturer's recommendations to prevent bending, abrasion, twisting, denting and scratching. Do not expose panels with strippable film to direct sunlight or extreme heat.
- .4 Inspect each panel and soffit upon delivery. Do not accept any panel or soffit that is damaged, scratched, dented. Remove these panels from the Place of the Work.
- .5 Replace damaged Products at no cost to the Owner.

PART 2 – PRODUCTS

2.1 Materials

- .1 Aluminum wall panels and soffits: 3 mm thick alloy 3003-H14 paint quality tensioned levelled aluminum sheet, by Kanalco Ltd. or approved equal.
 - .1 Exterior panels as detailed, prefinished in PPG Duranar XL fluoropolmer, medium gloss, to AAMA 2605, Duranar XL by PPG Canada Inc. Silver (3) coat system, matching clear anodized colour.
- .2 Fasteners: Stainless steel screws.
- .3 Securement subgirt assembly: 1.22 mm steel, hot dipped galvanized to CSA G164.
- .4 Sealant: CAN/CGSB-19.24, non-exposed, Dymeric by Tremco Ltd., colour to later selection by Consultant.

- .6 Primer: Non-stain primer or surface conditioner by sealant manufacturer.
- .7 Cleaner: Xylol, methyl-ethyl-ketone, toluol or as recommended by sealant manufacturer.

2.2 Fabrication

- .1 Maximum allowable fabrication tolerances:
 - .1 Panel bow: 0.2% of panel dimensions up to 4.75 mm (0.187") maximum
 - .2 Width or length: +/- 0.8 mm up to 1220 mm; +/- 1.5 mm from 1220 mm to 3360 mm.
 - .3 Squareness: maximum 4.7 mm difference between diagonal measurements.
- .2 Form all panels and soffits to dimensions indicated on drawings with tolerances to accommodate thermal expansion and contraction between panels and structural members.
- .3 Factory fabricate aluminum accessory and trim components, as detailed, ready for installation.
- .4 Fabricate panels and soffits with all corners fully welded and ground smooth.
- .5 Stiffen panels and soffits with metal stiffeners if it is deemed necessary, to keep trueness and flatness of panel face. Design and fabricate stiffeners such that they do not show local stresses and read-through on panels or soffits.

2.3 Finishing

- .1 Exterior panel and soffit finish shall be applied by a certified licensee of the paint manufacturer having a minimum of 5 years experience on the application of specified finishes on architectural aluminum panels and soffits and in full compliance with coating manufacturer's coating procedures.
- .2 In order to reduce any variation in tone of colour, finish shall be applied by one single paint manufacturer using one batch mix for all panels.
- .3 Protect all panels and soffits from possible damage.

PART 3 - EXECUTION

3.1 Examination

- .1 Examine surfaces receiving the work of this Section. Ensure that there are no ill prepared work that will adversely affect the performance of work of this Section. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 Installation

- .1 Install preformed aluminum panels and soffits and aluminum accessories and trim components with joints accurately fitted.
- .2 Separate dissimilar metals with bituminous paint, non-metallic tape or membrane wherever 2 dissimilar metals come in contact.
- .3 Install all securement assemblies including anchors, components, braces, reinforcements,

- related connections and fasteners for the aluminum wall system to meet specified performance criteria. Secure subgirts to membrane air seal covered concrete block and concrete with selftapping screws.
- .4 Friction fit insulation between subgirts for the full areas indicated to be insulated.
 - .5 Install work of this Section to accommodate normal deflections of building structure without transferring the load directly to the Work.
 - .6 Bent, scratched or otherwise damaged panels will not be acceptable. Site repairs will not be accepted. Remove damaged panels from the Place of the Work.
 - .7 Install panels and soffits in accordance with shop drawings and manufacturer's installation instructions using concealed fastening methods.
 - .8 Provide a dry wipe down cleaning of the panels as they are erected.

End of Section

PART 1 – GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.
- .5 Note that this Section is responsible for all re-roofing of the existing school scope of work included in this Section AND the full roofing scope of work for the addition with these same governing specifications.

1.2 Information Available To Bidders

1. The following is a summary of the existing roof construction for the project site involved in this roof replacement project. This information is provided to Bidders as a guideline only. Bidders shall not hold McKnight Charron Limited Architects or the Owner responsible for errors or omissions resulting from the use of this information, and accept full responsibility for any costs that result from not performing their own cut tests to confirm roof system composition.
2. This Section, 1.2 Information Available To Bidders **will not** form part of the Contract Documents.
3. Existing Roof Composition is as follows, with roof system components listed in sequential order from the roof surface down to the roof deck:

Roof Area J & L – year of installation 1995

- .1 Single ply conventional ballasted EPDM roof membrane and EPDM flashing, over;
- .2 5/8" thick Fiberboard Insulation, over;
- .3 3" thick Rigid Insulation, over;
- .4 Vapour Retarder, over;
- .5 1/2" Gypsum Board Sheathing
- .6 1-1/2" Metal Roof Deck

Roof Area K – year of installation 1995

- .1 Single ply conventional ballasted EPDM roof membrane and EPDM flashing, over;
- .2 5/8" thick Fiberboard Insulation, over;
- .3 3" thick Rigid Insulation, over;
- .4 Vapour Retarder, over;
- .5 1/2" Gypsum Board Sheathing
- .6 1-1/2" Metal Roof Deck

Roof Area N – year of installation 1985

- .1 Aggregate Surfacing and Asphalt Flood Coat, over;
- .2 4-ply Felt & Asphalt Built-Up Roof Membrane with Butyl flashings, over;
- .3 3/4" Plywood Deck

1.3 Summary of Work

1 Description Of Work

1. The Contract Documents, Supplementary Conditions and General Conditions shall govern the Work.
2. Work covered in this Contract includes for the removal, disposal and replacement of the specified roof systems and related carpentry where noted, metal flashings, sealants, and accessories required to complete the full roofing scope of work.
3. This Contract is for the provision of all new products, labour, equipment and services for the complete roof replacement in accordance with the Contract Documents.
4. Coordinate roofing scope of work with the successful Mechanical and Electrical bidding subcontractors to disconnect and temporarily relocate all existing mechanical and electrical work including existing conduits, cables, wiring, piping, ductwork, gas line, utility lines, HVAC units, fans, ducts and similar items to facilitate new roofing work and re-instate to original working condition in accordance with Contract Documents. Mechanical and Electrical subcontractors shall reconnect upon completion of roofing work to permanent completed working status.
5. Remove and dispose of all scuppers, existing sheet metal flashings and trim, sleeves, pitch-pans, redundant equipment, gravel, stone ballast, roof membrane and flashings, insulation, vapour retarder and all other roofing components not required to remain as part of new Work. Dispose of removed materials at an approved facility. Loosen or remove existing wall metal cladding and reinstall upon completion of new roof membrane and flashing installation as may be required at exterior walls.
6. Remove all debris and vacuum clean existing substrate/deck. Minimize use of blowers or brooms to prevent airborne dust. Clean and coat areas of surface corrosion on metal roof deck with rust inhibiting primer/paint. Replace areas of structurally unsound metal or wood roof deck with new deck to match existing type, profile and thickness in accordance with Unit Prices on Bid Forms.
7. Provide new carpentry, including wood blocking, wood plates, insulation stops, wood cant strip, and plywood sheathing where shown as new on Drawings and Specifications. Re-use existing wood blocking wood plates, cant strip and plywood where shown as remaining on Drawings. Replace any absent or damaged deteriorated wood blocking, plates, plywood and cants where shown as being re-used on drawings, in accordance with Unit Prices on Bid Forms.
8. Provide new roofing systems consisting of metal flashings, membrane flashings, membrane, tapered insulation and sumps, coverboard, base insulation, vapour retarder and thermal barrier.

9. Replace existing roof drains (3) in existing locations in accordance with the Contract Documents.
10. Provide all new sleeves, collars, pitch-pans and miscellaneous items to complete the roofing scope of work.
11. Provide all new pre-finished sheet metal flashings, scuppers, trim, and underlay membrane in accordance with Contract Documents.
12. Replace all existing metal pan/cap flashings at all curbs with material to match existing.
13. Provide sealants in accordance with Contract Documents.
14. Install new precast concrete pavers on insulation pads at bottom of existing roof scuppers and at all other locations shown on roof plan drawings.
15. Perform daily and final clean-up of work areas and surrounding areas and site.
16. Co-ordinate roof replacement work with mechanical and electrical work.
17. Dispose of all debris/waste in approved containers and transfer to Ministry of Environment approved disposal site(s).
18. Clean Site free of all traces of roofing work and repair or replace any damaged lawn, flowers, shrubs, and trees to the satisfaction of the Owner and Consultant.

2 New Roof Assemblies

- a. The new roof assemblies at the existing roof areas are to consist of the following components:

Roof Type I - Roof Areas J, K & L

All miscellaneous items within Contract Documents

- a) Sheet Metal Flashing and Trim
- b) 2-ply Modified Bitumen Membrane Flashings (Base mopped & Cap torched)
- c) 4-ply Type IV Glass Ply Built-up roof membrane in full asphalt mopping with aggregate cover
- d) 1-Ply #15 Perforated Felt Membrane in full mopping of asphalt
- e) Fiberboard Overlay Insulation – 1 layer of 16mm thick in full mopping of Asphalt, over;
- f) Base Insulation – Two (2) layers of 50mm (2.0") thick Polyisocyanurate Insulation, fully adhered in hot asphalt (with tapered drain sumps sloped 2%), over;
- g) 2-ply #15 Asphalt Perforated Felt Vapour retarder in a full mopping of asphalt over;
- h) Thermal Barrier - Silicone impregnated gypsum or cement Roof Board with water resistant core and glass fiber mat facer, size 13mm x 1220 x 1220mm (1/2" x 4' x 4') panels conforming to ASTM C1177 and C1278. Board must be non-combustible according to ASTM E136/CAN/ULC-S114 thermal barrier as tested to UL

1256/CAN/ULC-S126, flame spread 0, smoke developed 0 to ASTM E84/CAN/ULC-S102 and ASTM D3273 with a rating of 10.

Roof Type II - Roof Area N

All miscellaneous items within Contract Documents

- a) Sheet Metal Flashing and Trim
- b) 2-ply Modified Bitumen Membrane Flashings (Base mopped & Cap torched)
- c) 4-ply Type IV Glass Ply Built-up roof membrane in full asphalt mopping with aggregate cover
- d) 1-Ply #15 Perforated Felt Membrane in full mopping of asphalt
- e) Existing 19mm (0.75") Wood Roof Deck

Roof Type III - New Entrance Canopy

All miscellaneous items within Contract Documents

- a) Sheet Metal Flashing and Trim
- b) 2-ply Modified Bitumen Membrane Flashings (Base mopped & Cap torched)
- c) 4-ply Type IV Glass Ply Built-up roof membrane in full asphalt mopping with aggregate cover
- d) 1-Ply #15 Perforated Felt Membrane in full mopping of asphalt
- e) Thermal Barrier - Silicone impregnated gypsum or cement Roof Board with water resistant core and glass fiber mat facer, size 13mm x 1220 x 1220mm (1/2" x 4' x 4')
- f) Galvanized steel deck per Structural drawings

1.4 References

- .1 ASTM A 653/653M-04a, Standard Specification for Sheet Steel, Zinc Coated (Galvanized) by the Hot Dipped Process, General Requirements.
- .2 CAN/CSA S16-01, Steel Structures for Buildings.
- .3 CSA Standard W47.1-03, Certification of Companies for Fusion Welding of Steel Structures.
- .4 CAN/CSA W59-03, Welded Steel Construction.
- .5 CSA O121-08; Douglas Fir Plywood.
- .6 CSA O151-04 Canadian Softwood Plywood.
- .7 American Wood Preservers Association (AWPA) Standard P36-08
- .8 ASTM A370-08a; Standard Test Methods and Definitions for Mechanical Testing of Steel Products.
- .9 ASTM A653/A653M-04a, Standard Specification for Sheet Steel, Zinc Coated (Galvanized) by the Hot Dipped Process, General Requirements.
- .10 CSA A123.17/ASTM D 2178-04, Glass Felt, Asphalt, Used in Roofing.
- .11 CAN/ULC-S701-05 / ASTM C578-08b, Thermal Insulation, Polystyrene.
- .12 CGSB 37-GP-9Ma-83 / ASTM D41-05, Primer, Asphalt, Unfilled, for Asphalt roofing.
- .13 CGSB-37-GP-56M-85 / ASTM D6164-05 Membrane, Modified, Bituminous, Prefabricated and Reinforced for Roofing.
- .14 CSA A123.3-05/ASTM D226-06, Type 1, Asphalt Saturated Roofing Felt.
- .15 CSA A123.4-04 / ASTM D312-00 (2006), Bitumen for Use in Construction of Built-Up Roof Coverings.
- .16 CAN/ULC-S706-02 / ASTM C208-08e1, Wood Fiber Thermal Insulation.
- .17 CAN/ULC S704-03 / ASTM C1289-08, Polyisocyanurate Foam Insulation

- .18 ASTM C1177/C1177M-08, Standard Specification for Glass Mat Gypsum
- .19 ASTM C1278/C1278M-07a, Standard Specification for Fiber-reinforced Gypsum Panel.
- .20 CSA B111-1974 (R2003), Wire Nails, Spikes & Staples
- .21 CAN/CGSB 51.33M-89, Vapour Barrier Sheet
- .22 ASTM D1863-03, Mineral Aggregate Used in Built-up Roofs
- .23 Canadian Roofing Contractors Association (C.R.C.A.)
- .24 Underwriters Laboratories- UL /ULC CAN S-107 and S-126
- .26 CGSB 93.3-M91, Sheet, Steel, Galvanized Pre-finished Residential.
- .27 ASTM B370-03, Standard Specification for Copper Sheet & Strip for Building Construction.
- .28 ASTM B32-08, Standard Specification for Solder Metal.
- .29 ASTM D1970-08, CSA A123.22-08, Self-Adhering Polymer Modified Bituminous Sheet Materials.
- .30 CSA B111-1998 (R2003), Wire Nails, Spikes and Staples
- .31 Canadian Roofing Contractor's Association Specification Manual, latest edition.
- .32 CAN/CGSB 19.13-M87, Sealing Compound, One-Component, Elastomeric, Chemical Curing
- .33 CGSB 19-GP-14M84, Sealing Compound, One-Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.

1.5 Shop Drawings

1. Prepare and submit to the Consultant for review, tapered insulation and gas line support shop drawings, and prior to commencement of work. Provide one reproducible copy of the shop drawings.
2. Tapered insulation shop drawings: Indicate on tapered insulation shop drawings: all insulation sumps; tapered insulation layout, and all drainage patterns. Drainage patterns indicated on Contract Drawings shall be considered a guideline only. Insulation sump sizes, and profiles are indicated on roof plan drawings as are tapered insulation layout and direction of slope.
3. Gas line support shop drawings: Indicate on shop drawings support layout and spacing to comply with the Ontario Gas Code.

1.6 Job Conditions

1. Ensure that all surfaces to receive primer or membrane are clean, level, smooth, solid and dry, before commencing work each day.
2. Work shall not be carried out during inclement weather conditions.
3. Temperatures during application shall not be less than the minimum recommended by the material manufacturer.
4. Stop work when temperature remains consistently below -18°C, especially when wind chill effect would tend to set bitumen before proper adhesion takes place.
5. Use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.7 Protection

1. Protect surrounding surfaces from bitumen splatter, cover walls in hoisting and pumping areas with tarpaulins.

2. Locate kettles so smoke shall not enter buildings or discolour surfaces. **Only smokeless kettles will be used in the application of the roofing system. Kettles are to be located away from buildings as per School District safety protocol.**
3. Protect finished roofing at work areas or access to work areas with minimum 13 mm plywood underlaid with 25 mm polystyrene insulation board extending 900 mm beyond work area.
4. Prevent bitumen, precipitation and debris entering openings and drains during work.

1.8 Warranty

1. Provide Ontario Industrial Roofing Contractors Association (OIRCA) Standard Form of Warranty, complete with a copy of the CRCA's Preventative Maintenance Manual acceptable to the Owner and the Consultant.
The warranty shall be for a period of two (2) years from date of Substantial Performance as certified by the Consultant.
2. Provide a ten (10) year Labour and Material Warranty offered by the material Manufacturer at no cost to the Owner. Warranty shall be from date of Substantial Performance. **No distributor warrantee will be accepted by the Owner / Consultant.**
3. Repair leaks into building or roofing assembly within 24 hours of notification. Repair all roof membrane deficiencies including but not limited to ridges, blisters, splits, bare spots.
4. Inspect the roof 60 days before expiry of warranty and correct defects within 15 days of inspection. This inspection shall be performed at no additional cost to the Owner.
5. Carry out repair work required under the warranty in accordance with the recommendation of the Consultant and at no additional cost to the Owner.
6. For Sealants: Provide all applicable material and labour warranties offered by the material manufacturers.
7. Defective joint sealant installation covered under the warranty shall include but not be limited to, joint leakage, hardening, cracking, crumbling, melting, bubbling, shrinkage, running, sagging, change of colour, loss of adhesion, loss of cohesion and staining of adjoining or adjacent materials on surfaces.
8. Carry out all replacement and repair work during the warranty period as directed by the Consultant and at no additional cost to the Owner.
9. Inspect the roofing and sealant work sixty (60) days before expiry of warranty and correct defects within fifteen (15) days of inspection. This inspection shall be performed at no additional cost to the Owner.

1.9 Delivery and Storage

1. Deliver and store Products to manufacturer's instructions.
2. Do not store Products on roof.
3. Store Products under cover on elevated platforms, protected from weather and construction activities.
4. Deliver and store Products in original packages with labels intact. Immediately remove and dispose of wet materials off site.
5. Remove and replace damaged, wet or broken materials. Immediately remove and dispose of wet materials off site. Wet materials will not be incorporated into the construction of the roofing assembly.

6. Stand rolled materials on end, and protect edges.
7. Cover gravel during inclement weather.
8. Store Products away from open flame or ignition sources.
9. Do not transport Products through the building.

PART 2 – PRODUCTS

2.1 Materials

1 Roof Repair Products

- .1 Steel roof deck: Galvanized steel with Z275 zinc coating to ASTM A653M. Thickness (minimum 0.87 mm base steel thickness) to match existing. Profile for repairs and replacement to match existing deck profile as closely as possible.
- .2 Screw fasteners: "Teks Self-Drilling Screws" as manufactured by The Atlas bolt and Screw Company of Canada, or an approved alternate. Galvanized finish to CAN/CSA G164-M92 (R2003) galvanized steel screws, of required size and type to provide a minimum pull-out of 1300 newtons (300 lbs).
- .3 Structural steel: to CAN/CSA S16-01 and CAN/CSA G40.21-04, Grade 300W. Shapes and sizes as specified and as noted on Drawings.
- .4 Anchors: "Hilti HSL Heavy Duty Anchors, HSL-B M12/20" as manufactured by Hilti (Canada) Limited, or approved alternate.
- .5 Shop coat primer: to CAN/CGSB-1.40-M89.
- .6 Field Primer: Epoxal Zinc-Rich Primer by Niagara Protective Coatings or Galvafruid by W.R. Meadows, or approved alternate.
- .7 Shop Painting
 - .1 Clean surfaces in accordance with primer Manufacturer's recommendations. Apply two coats of primer to all surfaces of the steel components.
 - .2 Use primer unadulterated, as prepared by Manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7° C.
 - .3 Clean surfaces to be field welded; do not paint.

2 Rough Carpentry Products

1. Wood: Grade No. 2, Northern softwood species in accordance with the "Standard Grading Rules for Canadian Lumber" issued by the N.L.G.A. Wood to be pressure treated to a net retention of 4.0 kg/m³ with water borne preservatives.
 1. Wood Blocking : 38 x 89mm (2 x 4 in.), 38 x 138mm (2 x 6 in.), 38 x 190mm (2 x 8 in.), 38 x 241mm (2 x 10 in.), and 38 x 292mm (2 x 12 in.)
2. Plywood Sheathing: 13 mm (1/2 in.) exterior grade, solid one side, meeting CSA 0121 or CSA 0151.
3. Wood Cant Strip: 89 x 89 (4 x 4 in.) wood cant strip
4. Wood preservative: Copper Napthenate Solution (2% Copper) to AWPA Standards. To be used to paint ends of cut lumber.
5. Fasteners for wood: Galvanized steel wood screws with countersunk heads of size and length to provide minimum 38 mm (1 ½ in.) penetration into underlying member.

6. Fasteners for steel substrates: Flat head, self-tapping steel screw with galvanized finish as supplied by Fastening House, or Approved Alternate. Length: to suit penetrate through member a minimum of 19 mm.
7. Fasteners for masonry and concrete substrates: Tapcon fasteners with "Climaseal" corrosion resistant finish, as manufactured by Buildex/Red Head, or Approved Alternate. Screw to be of sufficient length to penetrate into substrate a minimum of 38 mm.
8. Bolts, Washers and Nuts: to ASTM A307, Grade A with ASTM A653 hex nuts and where indicated flat washers. Size as indicated on Drawings. Hot dipped galvanized or approved equivalent corrosion resistant finish.

3 Roofing Products

1. Manufacturer

1. All components of roofing system, including vapour retarder, rigid insulation, coverboard, roof membrane, membrane flashings, must be warranted by one Manufacturer as a complete system and must be approved for FM 1-120 minimum wind uplift resistance. Approved system Manufacturers are IKO Industries Ltd., Johns-Manville Corporation and Firestone Building Products.
2. If requested, provide documentation from Manufacturer stating all material to be installed as part of a complete 'roof system' are compatible and will not adversely affect the long term performance of the roof system.
3. The successful roofing contractor will be registered as an Approved Contractor by the manufacturer prior to the pre-bid meeting. Project must be registered with adhesive Manufacturer for Warranty purposes prior to start of roof replacement work.

2. Materials

1. Asphalt primer / Isolation coating: quality penetrating primer conforming to CGSB 37-GP-9M approved by material manufacturer.
2. Asphalt: Type II on slopes up to 1:8 and Type III on slopes over 1:8 to 1:4. Accepted material:
 - i. Type II, Easy Melt 200 or Type III Asphalt by IKO Industries
 - ii. Type II and III Asphalt by Bitumar Industries
3. Thermal Barrier Adhesive: Cold-process adhesive approved under UL 1897 for Wind Uplift Resistance, and to meet or exceed equivalent of Factory Mutual FM 1-120 wind uplift resistance. Approved Product:
 - i "Fas-N-Free Adhesive" by Tremco Manufacturing
 - ii "Insta-Stik Adhesive" by Dow Canada
4. Thermal Barrier (for steel and wood roof decks): Silicone impregnated gypsum or cement Roof Board with water resistant core and glass fiber mat facer, size 13mm x 1220 x 1220mm (1/2" x 4' x 4') panels conforming to ASTM C1177 and C1278. Board must be non-combustible according to ASTM E136/CAN/ULC-S114 thermal barrier as tested to UL 1256/CAN/ULC-S126, flame spread 0, smoke developed 0 to ASTM E84/CAN/ULC-S102 and ASTM D3273 with a rating of 10, no mould growth after 4 weeks exposure. Board must be FM and ULC or c-UL-us approved.

Acceptable Materials:

 - i. "Dens Deck Prime" by G-P Gypsum

- ii. "Securock Cement Roof Board" by USG Corporation.
5. Organic felt (for Vapour Retarder and Membrane Separation Ply): Composed of a resilient, high-strength cellulose perforated fiber mat that has been saturated and coated with bitumen. Acceptable Material:
 - i. No. 15 Perforated Asphalt Felt by IKO Industries
 - ii. No.15 Perforated Asphalt Felt by Building Products of Canada
6. Vapour Retarder Transition Membrane & Adhesive: Self-adhesive SBS membrane with cross-laminated polyethylene film, minimum 1 mm thickness that is compatible with bitumen.
7. Base Insulation: One layer of 50mm x 1220mm x 2440mm (2.0" x 48" x 96") polyisocyanurate insulation. Rigid closed cell polyisocyanurate foam core, bonded with fiber glass re-inforced facer on each side. Minimum long term thermal resistance (LTTR) of R5.6 per inch. Acceptable Material:
 - i. IKOTherm by IKO Industries
 - ii. E'NRG'Y 3 by Johns Manville
 - iii. ISO 95+ GL by Firestone Building Products
8. Tapered Drain Sump Insulation: Tapered polyisocyanurate insulation, installed in one layer at tapered portion of drain sump with a maximum thickness of 50mm (2.0") and minimum thickness of 25mm (1.0") thickness at drains. Sump size to be 2440 x 2440mm (8'-0" x 8'-0" with 2% slope) as noted on roof plan drawings. All tapered insulation is to be comprised of rigid closed cell polyisocyanurate foam core, bonded with glass fiber reinforced facers on each side. Minimum long term thermal resistance (LTTR) of RSI 1.06 per 25mm (R5.6 per inch). Acceptable Suppliers:
 - i. Accu-Plane Enterprises Inc.
 - ii. Posi-Slope Enterprises Inc.
 - iii. Everest Inc
9. Tapered Insulation: asphalt impregnated and coated one-side wood fiberboard, conforming to CAN/ULC-S706 and/or ASTM C208 with CCMC approval. Perimeter backslope is to be 2440mm (8'-0" wide), with a 2% slope. Maximum thickness to be 75mm (3.0") and minimum thickness to be 25mm (1.0"). Density to be a minimum of 22 g/cm³ (14lbs/ft³). Compressive strength to be a minimum of 310 kPa (45 psi) at 10% consolidation and minimum thermal resistance of R 2.50 per inch. Acceptable Material:
 - i. Accu-Plane Enterprises Inc.
 - ii. Posi-Slope Enterprises Inc.
 - iii Everest Inc.
10. Overlay Insulation (Coverboard): 25mm x 610mm x 1220mm (1.0 in. x 2 ft. x 4 ft.) asphalt impregnated and coated one-side wood fiberboard, conforming to CAN/ULC-S706 and/or ASTM C208 with CCMC approval. Density to be a minimum of 22 g/cm³ (14lbs/ft³). Compressive strength to be a minimum of 310 kPa (45 psi) at 10% consolidation and minimum thermal resistance of R 2.50 per inch. Acceptable Material:
 - i. Standard Coated Fiberboard by IKO Industries
 - ii. Structodeck by Knight-Celotex

iii FiberTop by Firestone Building Products

11. Glass Fiber Plies for BUR Membrane: Fiber ply sheet composed of a high-strength, inorganic mat of non-woven glass fibers which has been thoroughly permeated with oxidized asphalt. Acceptable Material:
 - i. IKOGlass Type IV Glass Ply Sheet by IKO Industries
 - ii. GlasPly IV by Johns Manville
 - iii. Ply IV (4) M by Firestone Building Products
12. Modified Bituminous Base Sheet Flashing Membrane: SBS modified bituminous membrane with a non-woven polyester reinforcing mat. Bottom side shall be sanded and top-side protected with a poly-film. Acceptable material:
 - i. Modiflex MP-180-FS Base Sheet by IKO Industries
 - ii. DynaMop PR 2.2 P/S Base Sheet by Johns Manville
 - iii. SBS Poly Torch Base by Firestone Building Products
13. Self-Adhered Modified Bituminous Base Sheet Membrane (for sloped structure on Roof 203): Self-adhesive modified bituminous base sheet (only at areas approved by Consultant): SBS modified bitumen with thermofusible film on the top surface and a silicone release film covering the self-adhesive underside, minimum 1.8 mm thick with polyester reinforcing mat or composite scrim. Use approved primer-adhesive where required by membrane Manufacturer to adhere membrane to substrate materials: Acceptable products:
 - i. Armourbond 180 Base Sheet by IKO Industries
 - ii. DynaGrip Base P/SA by Johns Manville
 - iii. MB Base SA by Firestone Building Products
14. Modified Bituminous Membrane Cap Sheet and Cap Flashing: SBS modified bituminous membrane with a non-woven polyester reinforcing mat of 250 g/m². Bottom surface shall be covered with a torchable poly-film and the top completely covered with ceramic granules. Colour to be chosen by Owner. Acceptable Material:
 - i. Torchflex TP-250 Cap by IKO Industries
 - ii. DynaWeld Cap 250 by Johns Manville
 - iii. Premium FR Torch Cap by Firestone Building Products
15. Nails: Hot dipped galvanized steel, spiral head, 25 mm (1 in.) nailing disc, minimum 25 mm (1 in.) substrate penetration to CSA B-111.
16. Aggregate: 6mm to 13mm (1/4 to 1/2”), well grade round, opaque, non-porous material, washed, free of fines, moisture, ice and snow and long splinters, in accordance with ASTM D 1863.

4 Roofing Accessories

1. Roof Drain: "RD-4C (Copper) Roof Drain " by Thaler Metal Industries Inc, SuperDome Drain by Johns Manville or CD-200 Dome Series Roof Drain by National Roofing Supply complete with clamping ring and U-Flow type seal. Diameter to suit existing rainwater leaders.

2. Vent (Soil) Pipe Sleeves: One piece spun aluminum, pre-insulated stack jack with an integral vandal-proof cap. To be a minimum of 305 mm (12 in.) above finished roof surface. Diameter to suit site conditions. Acceptable Material:
 - i. SJ-31 Aluminum Pre-Insulated Stack Jack by Thaler Metal Industries
 - ii. VR-AVS-INS by ALTRA Metal Specialties Inc.
 - iii. BEV-4 Aluminum Vent Flashing by National Roofing Supply.
 3. Paver Pedestals: prefabricated plastic pedestals with stackable shims to fit four pavers each. Acceptable Material:
 - i. Pave-EI Adjustable Pedestals with stackable shims by Pave-EI
 4. Precast Concrete Pavers: 610 x 610 x 38mm (24" x 24" x 1.5") precast concrete pavers with diamond textured top surface surface. Acceptable Material:
 - i. Brooklin Pavers by Brooklin Concrete Products Ltd.
 5. Asphalt Mastic: Sealmastic by IKO or Bestile Roof Cement by Johns Manville
 6. Sprayed polyurethane foam insulation: one component polyurethane foam insulating sealant to CAN/ULC-S705,
 - i. ENERFOAM by Abisko Manufacturing Inc."
 7. Banding Strip: Hot-dipped galvanized steel sheet steel, 3 mm (11 gauge) core nominal thickness, Z275 coating designation to ASTM A653M, 25 mm wide (1 in.).
 8. Fasteners for Masonry or Concrete: Tapcon fasteners with "Climaseal" corrosion resistant finish, or an approved equivalent, of sufficient length to provide a minimum 38 mm (1.5 in.) penetration into substrate.
 9. Bolts, washers and nuts: Stainless steel to ASTM A307.
 10. Fiber Cant Strip: 75mm x 75mm (3.0" x 3.0") asphalt impregnated fiber cant strip.
 11. Roofing Kettles
 1. Provide kettles of the type which is in accordance with current project regulations, which shall include a fume recovery system (i.e. smokeless).
 2. Provide each kettle with a calibrated portable long stem thermometer.
 3. Submit to the Consultant for review at time of bid, equipment data for the kettle to be used on this project.
- 5 Metal Roof Flashings
1. Flashing Materials
 1. Prefinished steel metal: Galvanized steel, 0.71 mm (24 ga) core nominal thickness, Z275 zinc coating to ASTM A653/A653M with a prefinished coat. Finish to be Stelco's

10000 series. Colour to be selected by Owner from Standard (non-custom) Colour range.

2. Galvanized sheet metal: Galvanized sheet steel, Z275 zinc coating to ASTM A653/A653M. Thickness as specified or indicated on Drawings
3. Starter strips: Fabricated from prefinished steel, 0.87 mm (22 ga) core nominal thickness, Z275 zinc coating to ASTM A653/A653M. Starter strips to be continuous.
4. Banding Strip/Termination bar: 3 mm x 25 mm (1/8 x 1 in.) Aluminum Bar.
5. Copper: 0.8 mm (16 oz.) cold rolled copper to ASTM B370.
6. Solder: to ASTM B32, lead free.
7. Flux: Commercial preparation suitable for materials to be soldered.
8. Isolation coating: asphalt based primer to CAN/CGSB-37-GP-9M.
9. Nails: to CSA B111, hot dipped galvanized steel flat head roofing nails of length and thickness to suit application.
10. Fasteners for masonry and concrete: Tapcon fasteners with "Climaseal" corrosion resistant finish, or an approved equivalent, of sufficient length to provide a minimum 38 mm (1 1/2in.) penetration into substrate.
11. Touch-up paint: as recommended by the prefinished sheet metal manufacturer.

2. Membrane Underlayment

1. Membrane underlayment: Composite self adhering membrane comprised of rubberized or modified asphalt and polyethylene to ASTM D1970 or CSA A123.22 as follows:
 - i. Perm-A-Barrier as manufactured by W. R. Grace & Co. of Canada Ltd.,
 - ii. Blueskin SA as manufactured by Henry Co. (Bakor).
 - iii. AquaBarrier AVB by IKO Industries Ltd.
2. Membrane underlayment primer: as supplied or recommended by the membrane underlayment manufacturer.
3. Membrane underlayment sealant (Type 2): as supplied or recommended by the membrane underlayment manufacturer.

6 Sealant Materials

1. Compatibility: All materials in a sealant system shall be compatible with each other and with the substrate.
2. Elastomeric Sealants: One part elastomeric, non-sag urethane based sealant. Acceptable products:
 1. Dymonic as manufactured by Tremco Ltd.;
 2. Sikaflex-1A as manufactured by Sika Canada Inc.;
 3. Vulkem 931 by Tremco Ltd.
 4. SK-1 Structural Sealant as supplied by ChemLink
 5. Or Approved Equivalent.
3. Silicone Sealants: Silicone based sealant to CAN/CGSB 19.13-M. Acceptable products:
 1. Spectrum 2 as manufactured by Tremco Ltd.;

2. Contractors SCS1000 Sealant as manufactured by GE Silicones - Canada;
 3. Dow Corning 999-A Silicone Building & Glazing Sealant as manufactured by Dow Corning Canada Inc.;
 4. Or Approved Equivalent.
4. Butyl sealants: Butyl rubber and polyisobutylene blend sealant in accordance with CGSB 19-GP-14M. Butyl sealant to be compatible with modified bituminous membrane flashings. Acceptable products:
1. Tremco Butyl Sealant as manufactured by Tremco
 2. Modified Membrane manufacturer's approved sealant
 3. Or Approved Equivalent.
5. Colour or colours of sealants shall be selected to match the substrate and shall be approved by the Consultant.
6. Primer: As recommended by the sealant manufacturer to assure adhesion of compound and to prevent staining of substrate materials.
7. Joint Backing: Polyethylene, urethane, neoprene or vinyl, extruded foam recommended by the sealant manufacturer. Circular shape with diameter 25% greater than joint width before installation.
8. Bond Breaker Tape: Pressure sensitive plastic tape, which will not bond to sealants, as supplied or recommended by the sealant manufacturer.
9. Void Filler: Glass fibre insulation with a nominal density of 14 kg/m³. Sized for 25% compression.
10. Cleaning Material: as recommended by sealant manufacturer.

PART 3 – EXECUTION

3.1 General

- .1 All work to be executed in accordance with Canadian Roofing Contractor's Association Specification Manual, latest edition.

3.2 Selective Demolition

1 Scope of Work

- .1 Provide all labour, Products, equipment and services necessary to perform the demolition, removal and disposal work specified in this Section and in accordance with the Contract Documents.

2 Protection

1. Provide barricades, guard rails, overhead protection, and other protection as required, to give full protection to occupants, general public, and workers employed on the demolition, and to adjacent buildings, properties and landscaping.

2. Protect adjacent building surfaces and properties against damage which might occur from falling debris or other causes related to the work. Maintain free and safe passage to and from and within the buildings.
 3. Prevent movement, settlement or damage to adjacent structures and parts of existing building to remain. Provide bracing as required. Make good damage and be liable for injury caused by demolition.
 4. Provide temporary protection against weather where work leaves unprotected openings in exterior walls of building.
 5. Prevent debris from blocking any building, site or municipal drainage system.
- 3 Demolition and Removal
1. Remove and dispose of existing roofing components specified in the Contract Documents that include but is not limited to the following:
 2. Existing sheet metal flashing and trim, sleeves, membrane, membrane flashings, securement bars, insulation, vapour retarder and all miscellaneous items not required to remain as part of the new work.
 3. Remove only areas of the existing roofing system which can be replaced with the new specified roofing system complete with membrane flashings on the same day. Ensure that the method of roof removal does not damage the existing roof decking, adjacent components or other substrates, which are to remain.
 4. Inform Consultant of any unusual or deteriorated construction revealed during roof removal. Allow Consultant to review conditions prior to roof replacement.
 5. Leave existing and new roofing in a watertight condition at end of each day's work.
 6. Leave work in safe condition so that no part is in danger of toppling or falling at end of each day's work.
 7. Do not use hoists or other equipment in a manner, which would overload the structure.
 8. Demolish in a manner to minimize dusting. Keep dusty materials wetted.
 9. Remove existing equipment, services and obstacles where required for refinishing or making good of existing surfaces, and replace same as work progresses.
- 4 Disposal
1. Dispose of debris on a continuous basis. Do not stockpile debris in a manner which would overload the structure. Dispose of demolished materials except where noted otherwise.
 2. Implement a waste management 3 R's program on this project site wherever feasible. Segregate from debris all materials that presently can be recycled or reused. Transport these materials to a reuse or recycling facility.
 3. Materials not acceptable for reuse or recycling shall be disposed of at an appropriate and authorized disposal site. Cost of transporting to dump site and for dumping of materials, etc., are to be included in the Bid Price.
 4. Burning of debris or selling of materials on site will not be permitted. Take measures to control dust during disposal operations.

3.3 Metal Deck Repairs

- 1 Scope of Work
1. Notify Owner and Consultant where deteriorated roof deck areas are exposed and require replacement. Supply all Products, equipment, services and labour required for the deck replacement and repairs in accordance with the Contract Documents.

- 2 Protection
 - .1 Protect existing and new roofing at work areas or access to work areas with minimum 13 mm plywood, underlain with 25 mm (1 in.) extruded polystyrene insulation board. Extend protection 900 mm (3 ft.) beyond work area.
 - .2 Protect surrounding areas and surfaces from damage during work of this section.
 - .3 Prevent precipitation, moisture and debris from entering openings during work.

- 3 Delivery and Storage
 - .1 Deliver and store materials to manufacturer's instructions in original packages with labels intact.
 - .2 Remove and replace damaged or broken materials.
 - .3 Store materials under cover on elevated platforms, protected by weather and construction activities. Do not exceed 1.0 kPa (20 p.s.f.) construction load on steel roof deck. Do not store materials or equipment on areas with "Tectum" roof deck.

- 4 Quality Assurance
 - .1 Perform welding of structural components only by fabricators certified by Canadian Welding Bureau to CSA welding qualification codes; CSA Standard W47.1-03, Certification of Companies for Fusion Welding of Steel Structures.

- 5 Shop Drawings
 1. Submit shop drawings prior to fabrication and installation if and where new deck modifications are required such as adding structural reinforcement.

- 6 Examination
 - .1 Examine site conditions and surfaces to ensure that they are in satisfactory condition for the commencement of the work of this section.
 - .2 Examine work of other trades for defects and discrepancies and report them to the consultant/owner in writing. Do not proceed with work until surfaces are satisfactory.

- 7 Existing Corroded Metal Deck Requiring Coating
 1. Inspection is to take place for all existing decking by the Contractor who shall immediately advise the Consultant of any suspect deck areas.
 2. Inspection is to include the examination of decking for corrosion, and corrosion leading to structural damage.
 3. Structural damage is defined to exist when original nominal deck thickness has been reduced by 30% or greater.
 4. If damage due to corrosion **is not structural**, area must be prepared and primed.
 5. Preparation includes but is not limited to the following:
 1. Area is to be hand scraped, removing all loose corroded material, and
 2. Area is to be power brushed and cleaned, providing a surface suitable for the specified primer.
 6. The prepared area is to be coated with 0.07 mm to 0.09 mm (3 mils to 3.5 mils) of steel deck primer.

7. A curing time is to be provided for all coated areas. Proceed with work without damaging galvanized primer.
 8. The coated areas are to be protected from scuffing or surface damage.
- 8 Structurally Unsound Deck Requiring Replacement
1. If deck damage is classified as structural, deck overlay must be provided. The damaged deck must also be prepared and primed as noted in this Section.
 2. The overlay deck must be of similar construction, type and material to provide a snug and neat fit with the existing deck.
 3. All obstructions and existing ridges must be bent back in line. Where necessary, cut side and end laps of new deck to satisfaction of Consultant to accommodate existing deck profile.
 4. The maximum space allowed between the existing and new deck, prior to fastening is, 1.5 mm (0.06 in.). If the gap exceeds this, drilling of the new deck is required to allow penetration of the fasteners, into the existing deck.
 5. The new deck is to be fastened to the existing deck with the specified self drilling screws. Pre-drill where required.
 6. The new overlay must span a minimum of two continuous supports.
 7. The placing of the new deck overlay is determined by the location of the damaged area. The new deck must be situated so that the midspan of the new deck is directly over the damaged area.
 8. The fasteners shall have a spacing of 305 mm (12 in.) on centre maximum, along the deck span longitudinally and on crests and in valleys.
 9. Where required and deemed necessary by the Consultant provide a continuous cover plate secured at 305 mm (12 in.) on centre along all edges.
 10. Upon completion of installation, mechanically brush clean fasteners, rivets, welds, and burned or scratched surfaces.
 11. All new fasteners, cuts, or exposed metal are to be coated with the specified primer and a thickness of 0.07 mm to 0.09 mm (3 to 3.5 mils).
- 9 Steel Decking Re-securement
1. Inspect all welds and securement points between existing steel decking and structural framing members. Notify the Consultant of all defective weld or securement locations.
 2. Mechanically fasten existing steel deck to the existing steel framing at defective weld or securement locations with specified screw fastener.
 3. Install self-tapping screw fasteners in accordance with the manufacturer's instructions. Provide a pilot hole through the structural steel if required to ensure proper thread engagement.
- 10 Cleaning
1. Daily as the work proceeds and on completion, remove all surplus materials and debris resulting from the foregoing work.
 2. Remove all stains, primers or other coatings from all affected surfaces.

3.4 Rough Carpentry

- 1 Scope of Work
1. Provide all labour, Products, equipment and services required to complete all carpentry work specified in this Section and in accordance with the Contract Documents.
 2. Provide new wood blocking where indicated on detail drawings.

- 2 Source Quality Control
 1. Identify lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board (CLSAB).
 2. Plywood identification: by grade mark in accordance with applicable CSA Standards.
- 3 Delivery and Storage
 1. Deliver and store Products to manufacturer's instructions and as specified in the Contract Documents.
 2. Do not store Products on roof in a manner that may overload the structure.
 3. Store Products under cover on elevated platforms, protected from weather and construction activities. Plastic shrink wrap is not acceptable.
 4. Remove and replace damaged or broken Products.
 5. Store Products away from open flame or ignition sources.
 6. Do not transport any Products through the building.
- 4 Installation
 1. Comply with the requirements of the Ontario Building Code, supplemented with the following paragraphs.
 2. Work shall be performed by skilled carpenters.
 3. Install new continuous plywood sheathing, wood blockings, cants, studs, nailers and continuous shims where required and detailed on Drawings and Details. Shims to be of sufficient height to ensure a minimum **five percent positive** slope on all parapet, perimeter and dividing walls greater than 100mm (4").
 4. Provide new curb extensions where required to meet a minimum of 254 mm (10 in.) above the height of the finished roofing membrane.
 5. Securely anchor wood blockings, cants, insulation nailers and shims in-place at 305 mm (12 in.) on centre in a staggered pattern. Fasten studs to top and bottom plates with two screw fasteners. Fasten wood blockings cants, insulation nailers and shims together and to the existing substrate with appropriate screw fasteners as required.
 6. Fasten plywood along supported edges at a minimum of 152 mm (6 in.) on centre. Fasten plywood to framing members within the field of the plywood panel at a maximum 450 mm (18 in.) on centre. Fasten plywood to wood framing and to existing substrates with appropriate fasteners.
 7. Refasten loose existing wood blockings, plywood, shims, cants with screw fasteners where permitted to remain as required and to the satisfaction of the Consultant.
 8. Co-ordinate work to keep cutting and remedial work to a minimum. Coat any cut edge with preservative by brushing, completely saturating and maintaining a wet film on the surface for a minimum 5 minute soak on lumber and 2 minute soak on plywood.
 9. Fastenings shall be of size and spacing required to assure secure anchorage. The fastener spacing of wood blocking to the substrate and to each other shall not exceed 305 mm (12 in.) unless otherwise accepted in writing by the Consultant. Provide the Consultant, if requested, with shop drawings, stamped by a Professional Engineer, if a greater fastener spacing is to be used.
- 5 Perimeters/Walls/Curbs/Dividers/Control and Movement Joints

1. Re-use existing wood blocking where indicated on Detail Drawings. Install new wood blocking, plywood and cant strips where indicated on Drawings.
2. Maintain minimum height of 305 mm (12 in.) above finished roof surface where permissible at walls and masonry chimneys.
3. Provide new wood blocking at existing penetration curbs. Curbs shall be a minimum of 305 mm (12 in.) above the height of the roofing membrane.

6 Cleaning

1. Remove all surplus materials and debris resulting from the foregoing work daily as the work proceeds and on completion.

3.5 Batt and Blanket Insulation

1 Examination

- .1 Examine site conditions and surfaces to ensure that they are in satisfactory condition for the commencement of the work of this section.
- .2 Examine work of other trades for defects and discrepancies and report them to the Consultant in writing. Do not proceed with work until surfaces are satisfactory.

2 Installation

- .1 Install batt insulation in accordance with the Contract Documents to maintain continuity of thermal protection to building elements and spaces.
- .2 Cut and trim batt insulation neatly to completely fill and fit spaces. Butt joints tightly. Use largest possible sizes to reduce the number of joints.
- .3 Fit batt insulation closely around all protrusions or penetrations.
- .4 Do not enclose insulation until reviewed and approved by the Consultant.
- .5 Pack metal deck flutes with batt insulation for a distance of 150mm (6") out from roof perimeters, roof dividers and roof curbs.
- .6 Pack voids between roof deck and all vertical surfaces at roof perimeters, roof dividers, and curbs, to prevent asphalt seepage into the interior of the school.

3.6 Built-Up Bituminous Roofing Membrane

1 Scope of Work

1. Provide all labour, Products, equipment and services required to complete the roof replacement work in accordance with the Contract Documents.
2. **This section includes for the removal and replacement of roof systems at Roof Areas J, K, L and N at Stayner Collegiate Institute, Stayner, Ontario.**

2 Examination

1. Examine site conditions and surfaces to ensure that they are in satisfactory condition for the commencement of the work of this section.
2. Examine work of other trades for defects and discrepancies and report them to the Consultant/Owner in writing. Do not proceed with work until surfaces are satisfactory.

3 Preparation

1. Remove existing built-up roof membrane and roof insulation. All loose vapour retarder material and adhesive must be removed.
2. Ensure that substrates are smooth, clean and dry.
3. Clean surfaces of all substances, which may be detrimental to the new roofing system.
4. Clean with solvent existing steel curbs and allow vapours to dissipate prior to membrane application.

4 Asphalt Preparation

1. Prepare asphalt following manufacturer's recommendations.
2. Application temperature to be in accordance with asphalt manufacturer's specified equiviscous temperature (EVT).
3. Ensure an accurate thermometer is available independent from the kettle.
4. Dispose of overheated asphalt.

3 General Application

1. Perform work as specified and in accordance with CRCA and manufacturers' printed instructions and the Contract Documents, whichever is more stringent.
2. Where manufacturers' printed instructions are not available, or a situation is ambiguous or unique, consult the Manufacturer's Technical Representative and the Consultant to review the situation and make clarifications. Instructions will be confirmed in writing by the Consultant.
3. Complete roofing membrane and membrane flashings to each day's termination point and install temporary water cut-off.
4. Remove water cut-off when work resumes.
5. Asphalt quantity:
 - i. 1.2 kg/m² (25 lbs/square) asphalt for each glass felt mopping and insulation layer mopping
 - ii. 1.0 kg/m² (20 lbs/square) asphalt for each organic felt mopping
 - iii. 0.6-0.8 kg/m² (12-16 lbs/square) for squeegee coat over completed 4-ply glass membrane (if required) and glaze coat over 2-ply vapour retarder (if required).
 - iv. 3.6 kg/m² (75 lbs/square) asphalt for flood coat
6. Fasteners: Size and spacing to ensure secure anchorage.

5 Thermal Barrier (at Roof Areas J, K & L only)

1. Prepare metal deck flutes or wood roof deck in accordance with adhesive manufacturer's requirements, which may require special priming, prior to adhesive application.
2. **Ensure pre-job qualification form is obtained and submitted to the adhesive Manufacturer prior to job start up. Provide form to Consultant prior to project start-up.**
3. Application of adhesive must be in accordance with Manufacturer's requirements for warranty and to the satisfaction of the Consultant.
4. Thermal barrier adhesive at steel deck is to be applied in continuous beads along the length of upper deck flutes, with 19 to 25mm (3/4" to 1") wide beads of adhesive installed in

accordance with adhesive Manufacturer's installation requirements to meet the equivalent of FM 1-120 wind uplift resistance.

5. Adhesive beads for wood and metal roof decks must not be spaced further than 305mm (12") on centre in any case. If Manufacturer's adhesive spacing requirement is less than 305mm (12") spacing, then follow most stringent of spacing requirements. Step panels into the adhesive beads immediately after applying adhesive, to achieve proper adhesion.
5. Install new thermal barrier panels with panels butted snugly together. Deck must be clean and dry prior to installing new materials.
6. Use largest pieces practical but no piece shall be smaller than 305 mm x 305 mm (12" x 12"). Fill in voids larger than 6 mm (1/4"). Install new pre-primed thermal barrier panels with panels butted snugly together. Deck must be clean and dry prior to installing new materials. Tape all joints in thermal barrier to prevent asphalt seepage between panels.

6 Primer

1. Apply primer to affected exposed masonry, concrete, wood, metal surfaces at a minimum rate of 0.5 litres/m². Do not allow primer to puddle.
2. Prevent primer from entering building interior through openings and joints on steel decks, by installing membrane barrier at roof perimeters, walls, curbs and other roof openings.
3. Allow primer to cure prior to application of vapour retarder.
4. Thermal barriers that are not pre-primed at the factory must be hand primed prior to application of vapour retarder.
5. Apply primer to existing bituminous roofing membranes at tie-in locations at a minimum rate of 0.5 litres/m². Allow primer to cure prior to application of new roofing membrane or membrane flashings as detailed.

7 Vapour Retarder

1. Provide a vapour retarder transition membrane of a 305 mm (12") wide strip of the self-adhesive transition membrane, at all junctions of decks and parapet /walls/curbs, where a gap exists that may allow entry of debris and seepage of bitumen into the building.
2. Vapour retarder transition membrane is to extend a minimum of 150 mm (6") onto the flat of the roof and 150 mm (6") onto the wall. Membrane must be fully adhered onto both surfaces.
3. Install 2-ply organic felt vapour retarder with Type III hot asphalt over the primed thermal barrier surface, at a rate of 1.0kg/m². Side laps to be 1/2 of sheet width plus 25mm (432 mm (17") - Imperial felts, 475 mm for Metric felts) as per CRCA. Provide adequate protection on interior to prevent asphalt drip and staining. **Temperature must not exceed 425 degrees F or damage may occur to thermal barrier panels.**
4. Extend vapour retarder to permit enveloping the insulation a minimum of 152 mm (6") at all penetrations, curbs, walls and perimeters over top layer of insulation, at all roofs. Seal vapour retarder to all pipe penetrations. **Glaze coat vapour retarder with hot asphalt if roofing system will not be completed the same day due to unexpected inclement weather.**

8 Base Insulation / Coverboard/ Tapered Insulation and Drain Sump Insulation

1. Install polyisocyanurate base and drain sump insulation over the vapour retarder, in a full mopping of Type III hot asphalt, applied at a rate of 1.2kg/m² and embed the specified

polyisocyanurate insulation while the asphalt is still fluid and hot. Step boards in place to ensure maximum adhesion immediately after placement.

2. Install the insulation ensuring that panels are tightly butted and end joints between panels are staggered 610mm (24 in.).
3. Install tapered polyisocyanurate insulation (where indicated on drawings) in a full mopping of Type III hot asphalt applied at a rate of 1.2 kg/m² following the drainage patterns indicated on Drawings and in accordance with reviewed shop drawings.
4. Apply a full mopping of Type III hot asphalt applied at a rate of 1.2 kg/m² over the polyisocyanurate insulation. Embed the specified overlay insulation (coverboard) while the asphalt is still fluid.
5. Install the coverboard insulation ensuring the long edges run parallel to steel decking, where applicable.
6. Walk insulation into hot asphalt to achieve solid bond, immediately after placement. Ensure maximum adhesion of boards.
7. Stagger all joints in insulation boards within each layer and between layers.
8. Do not lay more insulation than can be covered with the roofing membrane on the same day. Insulation which is damaged by moisture shall be promptly removed from the site.

9 Cant Strips

1. Install fibreboard cants at junctions between horizontal and vertical surfaces at locations indicated on Drawings. Fiber cants are to be used only on roof areas that have fully tapered insulation layout.
2. Provide tight flush joints between length of cants and miter corners.
3. Embed fiber cants in full mopping of hot asphalt, while asphalt is still fluid and hot, and ensure adequate anchorage.

10 Built-up Roofing Membrane

1. Install (one) 1-ply #15 organic felt base ply (separation ply) in hot asphalt over the coverboard insulation and perimeter backslope insulation. Extend 1-ply organic felt base ply to top of cants.
2. Overlap (one) 1-ply organic felt a minimum of 102 mm (4 in.) at all side laps and 152 mm (6") at all end laps. Stagger end laps a minimum of 1000 mm (3'-3").
3. Apply four (4) plies of Type IV Glass Fiber Felts lapped ¾ sheet width of felt plus 15 mm (700 mm (27.5")- Imperial felts, 765 mm for Metric felts) and with 152 mm (6 in.) end laps, mopped solid over base membrane and between each ply using Type III asphalt. Apply hot bitumen at a rate of 1.2 kg/m² of roof area. Embed roofing felts immediately into hot asphalt. Cross stripping of felts, phasing or gang rolling of felts will not be permitted.
4. The membrane must be applied without voids, wrinkles, buckles, fishmouths or any evidence of a lack of full adhesion. Deficiencies must be repaired to satisfaction of Consultant.
5. Thoroughly and effectively broom or roll each membrane application into hot asphalt to ensure full contact and adhesion. Do not step or walk on felts during or immediately after application until bitumen has set.
6. Extend glass felt roofing membrane to top of cants. Seal leading edge with mastic if base sheet flashing membrane will not be installed on the same day.

11 Base Flashing Membrane (Mop Grade)

1. Apply asphalt primer to surfaces which are to receive membrane flashings at a minimum rate of 0.5 litres/m². Allow primer to cure prior to membrane flashing application.
2. Embed modified bituminous base sheet flashings in a solid mopping of hot Type III asphalt at a minimum application temperature of 230°C (450 °F) and at a minimum rate of 1.2 kg/m². Apply membrane when asphalt is still fluid and hot and apply necessary pressure to ensure adequate bond to the substrate.
3. Install base sheet flashings vertically in maximum one metre wide strips at all locations shown in the details.
4. Lap base sheet flashing over the roofing membrane beyond the toe of cant a minimum of 152mm (6"). Side laps to be at least 75 mm (3").
5. Extend modified bituminous base sheet flashing over parapets, roof edges and down the outside face of walls as detailed. Secure membrane flashing with large head galvanized nails at 225mm (9") on centre.
6. Tie-in new roofing system with adjacent existing roofing system as indicated on Drawings and in accordance with the manufacturer's recommendations for the products used. All Products to be compatible with the existing and new roofing system components.

12 Cap Sheet Flashing Membrane (Torch Grade)

1. Apply cap sheet flashings with propane torch method following manufacturer's recommendations and ensuring full bond to base sheet flashing. Perform a two-hour fire watch on roof, starting after last flame is extinguished.
2. Install cap sheet flashings at all membrane cap sheet terminations and as detailed. Flashings must installed vertically in 1.0 metre (39") widths extending from exterior face, down interior surfaces and onto the de-granulated field cap sheet membrane a minimum of 205mm (8") past toe of cant strip.
3. Maintain a 75mm (3") minimum side lap. Ensure side laps are staggered a minimum of 102mm (4") from the side laps of the field cap sheet membrane.
4. Terminate cap sheet membrane at outside horizontal edge of parapets. At walls, terminate sheet above base sheet flashing membrane and secure with a termination bar fastened as detailed.
5. Cut, miter and weld corners. Ensure full bond of cap sheet at corner locations.
6. Apply approved mastic along membrane termination points where indicated on drawings and at locations where membrane flashings terminate at the base of a wall (horizontal and vertical termination points).
7. Repair any defects in cap flashing membrane installation in a manner acceptable to the Consultant and membrane manufacturer.
8. Broadcast loose granules into areas where excessive asphalt bleed out is evident and where required by Consultant.
9. Tie-in new roofing system with adjacent existing roofing systems as indicated on Drawings and in accordance with the manufacturer's recommendations for the products used. All products to be compatible with the existing and new roofing system components.

13 Roof Drains

1. Install roof drains in strict accordance with manufacturer's recommendations. Locations of roof drains on drawings are approximate only. Exact location shall accommodate existing conditions and shall be coordinated with the Consultant on site during construction.
2. Ensure any existing clogged drains and drain lines are vacuumed or pressure injected to remove all foreign matter and debris.
3. Install roof drains after roof membrane and insulation are completed. Embed deck flange in a layer of asphalt mastic
4. Apply a minimum of two (2) plies of No. 15 asphalt perforated felts over the flange followed by one ply of glass fibre felts. The first ply is to extend a minimum of 152 mm (6 in.) beyond outside edge of flange. Each additional ply shall extend a further 102 mm (4 in.) beyond underlying flashing ply.
5. Connect new drain stem to existing rainwater leader with U-flow rubber seals and clamped water tight.
6. Install new clamping ring and drain strainer and secure in place.
7. Ensure roof drains are clear of debris and free draining at project completion. Check roof drains for leakage and repair if leaking after installation.

14 Sleeve Flashings (All Types)

1. Apply isolation coating on underside of sleeve flange.
2. Install sleeve flashing around penetrations. Embed deck flange in a layer of asphalt mastic.
3. Close and solder all joints and seams where required. Clean copper on joint surfaces to receive solder with steel wool. Flux and fill joints with molten solder.
4. Wipe and wash clean all traces of acid from the flux immediately after the joints are made.
5. Install prefabricated sleeves at penetrations where specified. Where required, modify sleeves to accommodate multiple penetrations.
6. Apply a minimum of two (2) plies of No. 15 asphalt perforated felts over the flange followed by one ply of glass fibre felts or modified bitumen base sheet membrane. The first ply is to extend a minimum of 152 mm (6 in.) beyond outside edge of flange. Each additional ply shall extend a further 102 mm (4 in.) beyond underlying flashing sheet.
7. Install sheet metal storm collars fully sealed to roof penetration and secure in place with clamp. Apply sealant between storm collar, clamp and penetration in accordance with Section 07 92 00 – Sealants.

15 Curbs/Perimeter Walls

1. Fabricate and Install new curbs/perimeters/walls/joints in accordance with Section 06 10 00 – Rough Carpentry, and drawings.
2. Install new 13mm (1/2") plywood sheathing at all walls and as detailed. Provide a minimum height of 305 mm (12 in.) above finished roof surface unless otherwise approved by Consultant. Terminate plywood approximately 50mm (2") below bottom edge of reglets.
3. Plywood at walls is to be beveled on a 45 degree angle at the top edge to allow the membrane a smooth transition from wood onto masonry.
4. Apply membrane flashings as specified in this section, Article 3.11 and 3.12 Membrane Flashings and terminate flashings as detailed.

16 Asphalt Flood Coat and Aggregate Cover

1. Pour hot asphalt at a rate of 3.6 kg/m² (75 lbs. / square) over the roof membrane surface and while hot, embed 30 kg/m² (600 pounds per square) of specified aggregate.
2. Extend asphalt flood coat and aggregate cover over the entire roof membrane, including tie-in locations.
3. Provide a double pour of asphalt flood coat and aggregate cover at the following locations:
 - i. 1200mm (48") wide strip along roof perimeter, around curbs.
 - ii. 1000mm (39") diameter around all roof penetrations.
 - iii. Under all pre-cast concrete pavers.
4. Apply double pour in the following manner:
 - i. Sweep away all loose aggregate from the first application of asphalt flood coat and gravel in areas to receive a double pour.
 - ii. Apply a second pour of hot asphalt at a rate of 3.6 kg/m² (75 lbs. per square) and while hot, embed 30 kg.m² (600 pounds per square) of specified aggregate.

17 Gas Line/ Utility Line Support System

1. Install supports beneath gas and utility lines in accordance with the manufacturer's recommendations.
2. Install supports after roof membrane and double pour asphalt flood coat and aggregate cover is complete.
3. Space supports in accordance with the specified requirements of the Ontario Gas Utilization Code; table 8.9.3, entitles Spacing of Supports for Piping.
4. Adjust each support to ensure equal distribution of weight after installation of all supports.

18 Cleaning

1. Daily as the work proceeds and on completion, remove all surplus materials and debris resulting from the foregoing work.
2. Remove all stains, asphalt, caulking or other adhesive from all affected surfaces.

3.7 Sheet Metal Flashing & Trim

1 Scope of Work

1. Provide all labour, products, equipment and services required to fabricate and install sheet metal flashings and membrane underlayment in accordance with the Contract Documents.
2. This section also includes for the fabrication of all storm collars and square to round metal aprons.

2 Mock-up

1. Construct full size mock-ups in 2440 mm (8 ft.) lengths of the prefinished sheet metal cap and counter flashings for typical parapet, wall and roof edge conditions. Mock-ups to include all typical components, and specified colour.
2. Locate mock-ups at specific areas designated by the Consultant.

3. Mock-up will serve for initial review purposes by the Consultant and Owner and when accepted, shall represent the minimum standard for work. Mock-up may be included as part of final work.
4. All materials used for mock-up must be in complete accordance with the Contract Documents.

3 Samples

1. Submit to the Consultant for review, prior to sheet metal fabrication and installation, a sample of all Products.
2. Samples shall be in accordance with Contract Documents.

4 Protection

1. Protect the work of this section from damage. Damaged work which cannot be satisfactorily repaired, restored or cleaned, shall be replaced at no cost to the Owner.

5 Delivery and Storage

1. Deliver and store Products to manufacturer's instructions and CSSBI guidelines.
2. Do not store Products on roof.
3. Store Products under cover on elevated platforms, protected from weather and construction activities.
4. Remove and replaced damaged Products.

6 Warranty

1. Warranty shall be for a minimum of two (2) years for labour and materials. Provide all additional warranties that may be available from the manufacturer.
2. Defective sheet metal installation covered under the warranty shall include but not be limited to, loss of securement, corrosion, fading of finish, change of colour and staining of adjoining or adjacent materials or surfaces.
3. Carry out all replacement and repair work during the warranty period as directed by the Consultant and at no additional cost to the Owner.
4. Inspect the sheet metal installation sixty (60) days before expiry of warranty and correct defects within fifteen (15) days of inspection. This inspection shall be performed at no additional cost to the Owner.

7 Quality Assurance

1. Work of this section shall be carried out by specialists having a minimum five years related experience.
2. Work shall be performed in accordance with practices and details of SMACNA Architectural Manual – 6th Edition (Sheet Metal and Air Conditioning Contractors National Association Inc), unless otherwise required in the Contract Documents.

8 Fabrication

1. Shop fabricate flashings and trim in accordance with applicable requirements of SMACNA Architectural Manual and in accordance with the Contract Documents. Form sheet metal on bending brake, shaping, trimming and hand seaming on bench.
2. Form sections square, true, and accurate to size, free from distortion, oil canning and other defects detrimental to appearance and performance, and to dimensions indicated / required.
3. Fabricate cap flashings, starter strips, and base counter flashings less than 305 mm (12 in.) in height in 2440 mm (8 ft.) maximum lengths. Form counter flashings between 305 mm and 610 mm (12 in. and 24 in.) in height in 1220 mm (4 ft.) maximum lengths.
4. Provide a counter flashing and an intermediate vertical flashing where the cap flashing is greater than 610 mm (24 in.) above the top of the roofing membrane. Form vertical flashings in 1220 mm (4 ft.) maximum lengths.
5. Provide an "S-Lock" joint at all end joints and at all horizontal joints between the cap flashing and the vertical flashing and between the vertical flashing and base counter flashing.
6. Hem all exposed edges at least 13 mm (1/2 in.) for appearance and stiffness.
7. Provide a horizontal stiffening "V" on all face metal exceeding 225 mm (9 in.) in girth. Centre V-break in mid-span of panel. Cross Break metal flashing on all parapet flashings exceeding 450mm (18 in.)
8. Miter and form standing seams at all corners. Make allowance for movement at joints.
9. Apply isolation coating to metal surfaces to be embedded in concrete or mortar joints.
10. Metal flashing on vertical surfaces such as walls, construction joints, curbs, parapets, etc., is to terminate no more than 16mm (5/8") above finished gravel roof surface.

9 Installation

1. Install cap flashings, counter flashings, starter strips, and other miscellaneous sheet metal work in accordance with the Contract Documents.
2. Ensure parapet cap flashings are installed with a minimum positive slope of 5% toward the roof area on all parapets wider than 100mm (4") Slope to be provided by installation of continuous wood shims, plywood or wood blockings as detailed in accordance with Section 06 10 00 - Rough Carpentry.
3. Do not use exposed fasteners unless approved before installation or where shown on Drawings. If exposed fasteners must be used, they may only be installed with the permission of the Consultant and must be colour matched hex head self tapping screw type, with rubber or neoprene backed washers. Caulked screws or nails will not be permitted at exposed fastener locations.
4. Provide membrane underlayment beneath sheet metal flashings at all locations, except where membrane flashings are present. Install membrane underlayment in accordance with Article 3.2 of this section.
5. Provide continuous starter strips where detailed or required to present a true, non-waving, leading edge. Fasten starter strips to substrate at a minimum of 305 mm (12 in.) on centre.
6. Provide continuous banding strips / termination bar along top of membrane flashings where detailed and where membrane flashings terminate at the base of a wall and no other means of mechanical securement is specified or indicated. Fasten banding strips to substrate at a minimum of 152 mm (6 in.) on centre.
7. End joints where adjacent lengths of metal flashing meet shall be made using an "S-lock" joint. This shall be executed by inserting the end of one length in a 25 mm (1.0 in.) deep "S" lock

formed in the end of the adjacent length. Concealed portion of the "S" lock shall extend 25 mm (1.0 in.) outwards and shall be nailed to substrate. Face nailing of joints will not be permitted.

8. Insert top edge of sheet metal flashing under cap flashings to form weather tight junctions.
9. Turn top edge of flashings into recessed reglets or mortar joints a minimum of 25 mm (1.0 in.). Fasten sheet metal flashing into reglet joint at a maximum spacing of 450 mm (18 in.) or more often if required.
10. Ensure fasteners are located a minimum of 305 mm (12 in.) above the surface of the roofing membrane, unless other wise detailed.
11. Where detailed or required, create new saw cut existing / new reglets into masonry surfaces to receive metal flashings. Reglets are to be a minimum 25 mm deep x 13 mm wide (1 in. x 1/2 in.).
12. Replace all metal pan/cap flashings at all curbs unless instructed otherwise.

10 Membrane Underlayment

1. Install membrane underlayment under sheet metal flashings as indicated on Drawings and as per Manufacturer's printed instructions.
2. Ensure all surface areas are free from frost, dust, grease, oil, loose or spalled material.
3. Apply primer as per Manufacturer's printed instructions. Allow the primer to dry and install air barrier membrane on the same day as priming.
4. Proceed only when weather is favourable. Should installation be undertaken at temperature below 5°C (40°F), consult Manufacturer regarding special procedures.
5. Maintain the recommended minimum side lap and end lap as per the manufacturer's printed instructions.
6. Roll the membrane underlayment immediately after placement to ensure continuous adhesion. The roller to be of the type and size recommended by the Manufacturer.
7. Ensure the continuity of the membrane underlayment is maintained at all penetrations and terminations. Apply membrane sealant as required to fill inaccessible gaps following the manufacturer's instructions.
8. Do not cover the membrane underlayment until it is reviewed and approved by the Consultant.

11 Sealants

1. Apply sealant at all junction between metal counter flashing and reglet joint in accordance with Section 07 92 00 – Joint Sealing.

12 Cleaning

- .1 Daily as the work proceeds and on completion, remove all surplus materials and debris resulting from the foregoing work.
- .2 Remove all stains, caulking or other adhesive from all affected surfaces.

3.8 Joint Sealants

1. Examination
 - .1 Inspect existing conditions, and substrates upon which work of this section is dependent. Report to the Consultant in writing any defects or discrepancies. Commencement of

work implies acceptance of existing conditions and assuming full responsibility for the finished condition of the work.

- .2 Verify, before commencing work, that the joint size, depth and substrate will not adversely affect execution, performance or quality of completed work; and that the joints can be sealed in an acceptable condition by means of preparation specified in this section. Verify site conditions together with sealant manufacturer's representative.
- .3 Defective work resulting from application to unsatisfactory joint conditions will be considered the responsibility of those performing the work of this section.

2. Removal and Preparation

- .1 Remove existing sealant and backing material, dust, oil, grease, oxidation, millscale, coatings and all other loose material by cutting, brushing, scrubbing, scraping, and / or grinding. Use method of surface preparation suitable for substrate, as recommended by sealant manufacturer, and which does not damage the adjacent surfaces.
- .2 Rake out joints, cracks and crevices to receive sealant, to a depth measuring half the joint width.
- .3 Clean down surfaces to be caulked with clean cellulose sponges or rags soaked in solvent recommended by the sealant manufacturer, and wipe dry with clean cloth. Ensure that the solvent does not damage the painted surfaces.

3. Application

- .1 Apply sealant in compliance with sealant manufacturer's recommendations.
- .2 Prime surfaces to receive sealants as required by sealant manufacturer's recommendations to provide a positive and permanent adhesion and to prevent staining. Prime surfaces prior to installing backing material or bond breaking tape. Test substrates for adhesion.
- .3 Install backing material in all joints prior to applying sealants. Diameter of the backing material shall be 25% more than the width of the joint.
- .4 Install backing material to provide a caulked joint meeting the depth requirements as set out in the sealant manufacturer's specifications. Maintain a minimum of 2:1 ratio, for reglet depth to width.
- .5 Apply bond breaker tape, prior to applying sealant, where joints are of insufficient size to install backer rod or where recommended by the sealant manufacturer or Consultant. Ensure bond surface area meets the minimum required size recommended by the sealant manufacturer.
- .6 Mask, with masking tape, all surfaces adjacent to joints which are likely to become coated with sealant during sealant application.
- .7 Fill joints completely to required depths with sealant compound. Use sufficient pressure to fill all voids and joints. Sealant shall bond to both sides of the joints but not to backing material.
- .8 Finish joints so that they are smooth and free from ridges, wrinkles, air pockets and embedded foreign materials.
- .9 Tool joints to a slightly concave surface.

4. Cleaning

- .1 Remove masking tape and sealant smears and droppings resulting from work of this section as the work progresses and before it has set. Use recommended cleaners as required.
- .2 Clean up and remove from the job site on a daily basis, all rubbish and surplus materials resulting from this work.

3.9 Mechanical Work Affecting this Section

1 Scope of Work

1. The Roofing Contractor shall ensure that all labour, products, equipment and services required to carry out the mechanical work affecting this Section is co-ordinated with the Mechanical Contractor in accordance with the Contract Documents.

2 Protection

1. Protect the work of this section from damage. Damaged work which cannot be satisfactorily repaired, restored or cleaned, shall be replaced at no cost to the Owner.
2. Protect finished roofing work areas or access to work areas with minimum 19 mm (3/4 in.) plywood underlain with 25 mm (1 in.) extruded polystyrene insulation board (Type 4) extending 914 mm (36 in.) beyond work area.

3 Qualifications

1. All work shall be performed by a contractor with adequate plant, equipment and skilled licensed trades people to perform the work expeditiously and shall be known to have been responsible for satisfactory work similar to that specified during a period of at least the past five (5) years.

4 Warranty

1. Warranty shall be for a minimum of two years for labour and materials. Provide all additional warranties that may be available from the manufacturer.
2. Defective applications covered under the warranty shall include but not be limited to, loss of attachment, delamination, slippage and staining of adjoining or adjacent materials or surfaces.
3. Carry out all replacement and repair work during the warranty period as directed by the Consultant and at no additional cost to the Owner.

5 Examination

1. Examine site conditions and surfaces to ensure that they are in satisfactory condition for the commencement of the work of this section.
2. Examine work of other trades for defects and discrepancies and report them to the Consultant in writing. Do not proceed with work until surfaces are satisfactory.

6 General Installation

1. Perform work as specified and in accordance the manufacturers' printed instructions.

2. Where manufacturers' printed instructions are not available, or a situation is ambiguous or unique, consult the Manufacturer's Technical Representative and the Consultant to review the situation and make clarifications.
 3. Instructions will be confirmed in writing by the Consultant.
- 7 Mechanical Contractor Scope of Work – (Condensing Unit, Exhaust Fans, Exhaust Stacks & Plumbing Vents) related to this Section.
1. Shut off, disconnect, remove, store for reinstallation or raise existing mechanical units and all related ductwork, piping and electrical components required to remain, to permit roofing installation.
 2. Disconnect all electrical conduits and gas lines, as required to permit installation of new sleeve flashings and as required to raise pipes.
 3. Modify or replace all related piping and electrical components as required to accommodate the new curb flashings.
 4. Reinstall mechanical units onto curbs or sleeper supports. Reconnect all ductwork, pipes, gas lines, and electrical conduits. Restart and check the operation of all equipment.
 5. Perform all work promptly to minimize any disruption of service. Service shall not be interrupted for more than four (4) continuous hours without approval from the Owner and Consultant.
 6. Reuse or replace existing damaged vent pipes if required.
 7. Roof top units removed that are connected to glycol lines shall be drained into approved containers and stored in a safe environment.
 8. All connections to roof top units shall be capped and secured in case of pressure increase. Reinstall gas lines upon completion of roofing work and must be pressure tested.
 9. Mechanical Contractor shall be present when condensing units are removed and reinstalled by crane in case of damage to connections.
 10. Disconnect and reconnect Building Energy Management System where required.
 11. Cover existing roof curbs and extended ductwork where necessary.
 12. All exhaust fans are to be complete with adapter curbs to allow for increase in insulation thickness, where applicable.
 13. All vents above roof level are to be removed to 36" above roof level and temporary cap installed.
 14. Make vents below roof level secure.

15. No equipment is to be removed from roof level until date of removal is approved by the Simcoe County District School Board.
16. Each Mechanical Contractor is to allow for overtime to complete the above work by the work completion date set by the Simcoe County District School Board.
17. It is the responsibility of the Mechanical Contractor to monitor the progress of the Roofing Contractor and to coordinate work so that the reinstallation of roof equipment is not delayed.

3.10 Electrical Work Affecting this Section

1 Scope of Work

1. Disconnect power from units using qualified Electrician.
2. E.S.A. inspection is required and all costs are to be included in Contract Price.
3. Extend Power wiring to units to accommodate new electrical flashings where required.
4. Appropriate lock-out procedures must be adhered to throughout all work.
5. Arc flashing training and equipment are required to be 70E compliant.

3.11 Cleaning

1. Clean up and remove from the job site on a daily basis, all rubbish and surplus materials resulting from this work.

End of Section

PART 1 - GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Related Sections

- .1 Section 08 52 10 Aluminium Windows
- .2 Mechanical – Division 15
- .3 Electrical – Division 16

1.3 Related Work

- .1 Fire stopping and smoke seals at roof/wall intersections, within mechanical assemblies (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) are specified in Divisions 15 and 16 respectively.

1.4 References

- .1 CAN4-S115-M95 Standard Method of Fire Tests of Firestop Systems.
- .2 ULC, Underwriters' Laboratories of Canada. ULI or Intertek.

1.5 Samples

- .1 Submit samples in accordance with Section 01 34 00.
- .2 Submit samples showing actual firestop material proposed for project.

1.6 Shop Drawings

- .1 Submit product data in accordance with Section 01 34 00.
- .2 Submit manufacturer's product data for materials. Include manufacturer's instructions for installation.

1.7 Quality Assurance

- .1 Work shall be performed by firm experienced in installation of firestopping systems. Firestopping installer must be able to document minimum five consecutive years of activity in the field and have successfully completed projects of similar size and complexity. Prior to

commencement of work, the firestopping firm must be able to provide product manufacturer's letter of recommendation stating acceptance of firm's training in application of products being installed under this Contract.

- .2 Manufacturer's Sales representative (of product used) shall at request of Consultant; review installation of Fire Stopping and Smoke Seals and provide written evaluation report on quality of installation and conformance with the manufacturer's written specifications.

PART 2 - PRODUCTS

2.1 Materials

- .1 Fire stopping and smoke seal systems: in accordance with CAN4-S115-M95, with FH ratings conforming to OBC.
 - .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4-S115-M85 and not to exceed opening sizes for which they are intended.
- .2 Service penetration assemblies: certified by ULC, ULI or Intertek in accordance with CAN4-S115-M85 and listed in ULC Guide No. 40 U19.
- .3 Service penetration firestop components: certified by ULC in accordance with CAN4-S115-M85 and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.
- .4 Firestop Systems (40U19): Firestop systems are intended for installation in fire separations and are assigned fire ratings when tested in accordance with the Standard Method of Fire Tests of Firestop Systems, CAN4-S115M. These firestop systems are intended for use in fire resistive wall and/or floor assemblies which are evaluated in accordance with CAN/ULC-S101M, Standard Methods of Fire Endurance Tests of Building Construction and Materials (see Guide No. 40U18). These firestop systems are composed of various materials. For the most part, the illustrated system reflects the precise dimensions and conditions of the sample assembly which has been subjected to the fire endurance and hose stream test. The differential pressure between the exposed and unexposed surfaces of the tested assembly measured during the fire test is indicated in the text under each illustrated system. Two types of firestop systems are included in this category:
 - .1 Service penetration firestop systems (SP): These systems are identified by system numbers that begin with the prefix SP. These systems are generally intended for installation in openings of limited dimensions and shape in floor or wall assemblies, as specified in the illustrated systems. If tested, permitted penetrating items such as pipes, cables, cable trays, etc. will be specifically identified in the illustrated systems and respective text. Unless specifically described in the individual systems, the use of penetrating items of alternate size, type, quantity, etc. can significantly affect the rating(s) of the system.
 - .2 Joint firestop systems (JF): These systems are identified by system numbers that begin with the prefix JF. These systems are generally intended for installation in openings such as construction joints, gaps and spaces in floors or walls or at floor and wall intersections, as indicated in the illustrated assemblies. These systems are generally not limited in length unless indicated, but are limited in width and depth as specified. These firestop systems do not incorporate penetrating items such as pipes or cables. The use of such penetrating items can significantly affect the rating(s) of the systems.
- .5 Ratings: Four ratings may be established for each firestop system (F, FT, FH AND FTH). An F rating is based upon flame occurrence on the unexposed surface. An FT rating is based upon

temperature rise criteria as well as flame occurrence on the unexposed surface. When a test sample is also subjected to a hose stream test, FH and FTH ratings may be established. An FH rating is based upon flame occurrence on the unexposed surface and acceptable performance during the hose stream test. An FTH rating is based upon a temperature rise criterion, flame occurrence on the unexposed surface and acceptable performance during the hose stream test. The rating of a firestop system applies to its use in the specific assembly of materials, penetration and floors or walls in which it was tested.

- .1 "F" Rating: A firestop system will be considered as meeting the requirements for an F rating if it remains in the opening during the fire test for the rating period without permitting the passage of flame through openings, or the occurrence of flaming on any element of the unexposed side of the assembly.
- .2 "FT" Rating: A firestop system shall be considered as meeting the requirements for the FT rating if it remains in the opening during the fire test within the limitations as specified for an F rating and additionally, the transmission of heat through the firestop system during the rating period shall not have been such as to raise the temperature of any thermocouple on the unexposed surface of the firestop system more than 181 Deg. C above its initial temperature.
- .3 "FH" Rating: A firestop system shall be considered as meeting the requirements for an FH rating if it remains in the opening during the fire test and hose stream within the limitations for an F rating and additionally, during the hose stream test, the firestop system shall not develop any opening that would permit a projection of water from the stream beyond the unexposed side.
- .4 "FTH" Rating: A firestop system shall be considered as meeting the requirements for an FTH rating if it remains in the opening during the fire test and hose stream test within the limitations as described for F, FT and FH ratings.
- .6 Fire-resistance rating of installed fire stopping assembly shall not be not less than the fire-resistance rating of surrounding floor and wall assembly.
- .7 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal; do not use cementitious or rigid seal at such locations.
- .8 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal; do not use a cementitious or rigid seal at such locations.
- .9 Primers: to manufacturer's recommendation for specific material, substrate, and end use.
- .10 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.
- .11 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.
- .12 Sealants for vertical joints: non-sagging.
- .13 Materials shall be products of Dow Corning, General Electric of Canada, 3M Canada Inc., Tremco, Instant Fire Stop, A/D Fire Protection System Inc., Thermal Ceramics or Wormald Canada

PART3 - EXECUTION

3.1 Preparation

- .1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.
- .2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.
- .3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.
- .4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.2 Installation

- .1 All non-rated fire separations shall be smoke sealed to withstand the hose stream test. This means for most manufacturer's their smoke seal product is rated "FH"
- .2 All rated fire separations, must be smoke sealed and provide protection from flame spread for a period of time equal to the rating of the fire separation and withstand the hose stream test. This means for most manufacturer's their smoke seal and fire stop product is rated "FH"
- .3 General: fire stop all gaps and penetrations in fire separations and fire walls.
- .4 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer's instructions.
- .5 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separations are maintained.
- .6 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
- .7 Tool or trowel exposed surfaces to a neat smooth finish.
- .8 Remove excess compound promptly as work progresses and upon completion.

3.3 Inspection

- .1 Notify Consultant when ready for inspection and prior to concealing or enclosing firestopping materials and service penetration assemblies.

3.4 Schedule

- .1 Firestop and smoke seal at:
 - .1 Penetrations through fire-resistance rated masonry, and concrete.
 - .2 Control and expansion joints and deflection joints in fire-resistance rated walls and floors
 - .3 Penetrations through fire-resistance rated walls, floor slabs, ceilings and roofs.
 - .4 Openings and sleeves installed for future use through fire separations.
 - .5 Around mechanical and electrical assemblies penetrating fire separations.
 - .6 Fill voids above all walls indicated to be rated or non-rated fire separations, to underside of

concrete or steel deck, as applicable

- .7 Gaps at construction joints, gaps and spaces in floors or walls or at floor and wall intersections, as indicated in the illustrated assemblies.
- .8 Rigid ducts: greater than 129 cm²: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 07 51 13 Built-up Bituminous Roofing Membrane
- .2 Section 08 12 00 Aluminum Doors and Frames
- .3 Section 09 25 00 Gypsum Board

1.2 Summary

- .1 This Section specifies caulking and sealants not specified in other Sections.
- .2 Refer to other Sections for other caulking and sealants.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Samples

- .1 Submit samples in accordance with Section 01 34 00.
- .2 Submit samples of manufacturer's full range of colours in each type of sealant for selection by Consultant.

1.5 Delivery, Storage, and Handling

- .1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture and water.

1.6 Environmental and Safety Requirements

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

PART 2 - PRODUCTS

2.1 Sealant Materials

- .1 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers use only these primers. Colours of sealants will be selected by Consultant.
- .2 Type A: to CAN/CGSB-19.13-M87, Type MCG, Class 2-25, one component, elastomeric, chemical curing, silicone sealant, or CAN/CGSB-19.24-M90, Type 2, Class B, multi-component, chemical curing, ASTM C-920, Type M, Grade NS, Class 50, Use T, NT, M, A, and O. Dymeric 240 by Tremco Mfg. Co. (Canada) Ltd.
 - .1 Interior and exterior joints between hollow metal frames and masonry.
 - .2 Interior and exterior joints between louvre and vent frames and adjacent materials.
 - .3 Interior joints between window sills and window frames and walls.
 - .4 Interior and exterior masonry control joints and interior inside corners of masonry walls.
 - .5 All other locations where sealing is required or shown on drawings except in locations designated for Type B and C and except where sealing is specified in other sections.
- .3 Type B: to CAN/CGSB-19.22-M89, ASTM C920, Type S, Grade NS, use NT, G, A and O mildew resistant sealing compound for tubs and tile. Tremsil 200 by Tremco.
 - .1 Joints between urinals, shower units, mop basins, toilets and washbasins and adjacent materials.
 - .2 Joints between splashbacks and walls.
- .4 Type C: to CAN/CGSB-19.24-M90, Type 1, ASTM C920, Type M, Grade P, Class 25, Use T, M, O. multi-component, chemical curing. THC 900/901 by Tremco.
 - .1 Control joints in exposed concrete slab-on-grade floors.
 - .2 Joints in horizontal surfaces between concrete slabs, pavers and masonry.
- .5 Type D: to Can/CGSB- 19.13-M87, MC-1-25-B-N, ASTM C 920, Type S, Grade P, Class 50, Use T, M, A, O and I (Class 2). Single component, moisture curing. Vulkem 45 SSL by Tremco.
 1. Control Joints in exposed concrete slab-on-grade floors.
 2. Joints in horizontal surfaces between concrete slabs, pavers and masonry.

2.2 Back-up Materials

- .1 Joint filler: Polyethylene, closed cell, foam rope with shore "A" hardness of 20 and tensile strength between 140 and 200 kPa.
- .2 Joint primer: As recommended by sealant manufacturer for type of surface being primed.
- .3 Bond Breaker Tape:
 - .1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 Joint Cleaner

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant; as recommended by sealant manufacturer.

PART 3 - EXECUTION

3.1 Preparation of Joint Surfaces

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

- .2 Clean joints and spaces which are to be sealed and ensure that they are dry and free of dust, loose mortar, oil, grease, frost and other foreign material. Clean ferrous metals of all rust, mill scale and foreign materials by wire brushing, grinding or sanding.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Prepare surfaces in accordance with manufacturer's directions. Use cleaners such as ethyl alcohol, ketone solvent, xylol, toluol, IPA (99% pure) or methyl-ethyl-ketone. Clean precoated metals with solutions or compounds which will not injure finish and which are compatible with joint primer and sealant.

3.2 Priming

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.3 Backup Material

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint width/depth ratio.
 - .1 6 mm x 6 mm: minimum joint size
 - .2 6 mm to 12 mm: depth shall equal width
 - .3 12 mm to 50 mm: depth equal 1/2 of width or 12 mm whichever is less.

3.4 Mixing

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.5 Painted Surfaces

- .1 Caulk joints in surfaces to be painted before surfaces are painted.

3.6 Application

- .1 Sealant;
 - .1 Apply sealant in accordance with manufacturer's instructions.
 - .2 Apply sealant in continuous beads.
 - .3 Apply sealant using gun with proper size nozzle.
 - .4 Use sufficient pressure to fill voids and joints solid.
 - .5 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .6 Tool exposed surfaces to give slightly concave shape.
 - .7 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing;
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.

- .3 Cleanup;

- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess and droppings, using recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 07 90 00 Sealants
- .2 Section 08 71 00 Finish Hardware
- .3 Section 08 80 00 Glazing
- .4 Section 09 90 00 Paints and Coatings
- .5 Division 15

1.2 References

- .1 ASTM A525M-87 Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- .2 ASTM A527M-85 Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock Forming Quality.
- .3 ASTM A568M-88 Specification for General Requirements for Steel, Carbon and High-Strength Low-Alloy Hot Rolled Sheet and Cold Rolled Sheet.
- .4 CAN4 S104-M80 Fire Tests of Door Assemblies.
- .5 CAN4 S105-M85 Fire Door Frames.
- .6 CAN/CGSB-1.40-M89 Primer, Structural Steel, Oil Alkyd Type.
- .7 CGSB 51-GP-21M Thermal Insulation, Urethane and Isocyanurate, Unfaced.
- .8 Canadian Steel Door and Frame Manufacturers' Association, (CSDFMA) Specifications for Commercial Steel Doors and Frames, 1990.
- .9 NFPA 80-1990 Fire Doors and Windows.

1.3 Requirements of Regulatory Agencies

- .1 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4 S104-M80 revised 1985 and CAN4 S105-M85 for ratings specified or indicated.
- .2 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.

1.4 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 34 00.
- .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed and louvred, arrangement of hardware and fire rating.
- .3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and finishes.

1.5 Delivery, Storage, and Handling

- .1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from damage before and after installation.
- .2 It is recommended that the General Contractor use sets of construction doors during construction and install the finished product only when construction is nearing completion. Dented, twisted, cracked or otherwise damaged doors and frames will be rejected.

PART 2 - PRODUCTS

2.1 Materials

- .1 Steel: Commercial grade steel to ASTM A568M-88, Class 1, exterior doors hot-dip galvanized to ASTM A527M-85, coating designation to ASTM A525M-87, ZF 75 (A25), known commercially as "Colourbond", "Satincoat" or "Galvanneal".
- .2 Doors: 1.6 mm base steel thickness for all doors
- .3 Interior Door Core:
 - .1 Honeycomb: structural small cell 24.5 mm maximum kraft paper "honeycomb" core. Weight: 36.3 kg per ream minimum; density: minimum 16.5 kg./cu. m, sanded to required thickness.
- .4 Exterior Door Core:
 - .1 Bonded core: urethane or isocyanurate board insulation to CGSB 51-GP-21M, RSI 1.9, minimum. Density: 32 kg./cu. m minimum.
- .5 Frames: 1.6 mm base steel thickness. Panels: 1.3 mm base steel thickness.
- .6 Provide other door and frame components in accordance with CSDFMA and NFPA 80 requirements, including hardware reinforcements, mortar guard boxes, glass trim, floor anchors, jamb spreaders and appropriate type of wall anchors. Minimum thickness of door and frame components shall be as follows:
 - .1 Lock/Strike Reinforcements: 1.6 mm
 - .2 Hinge Reinforcements: 3.5 mm
 - .3 Flush Bolt Reinforcements: 2.7 mm
 - .4 Reinforcements for Surface Applied Hardware: 1.2 mm
 - .5 Top & Bottom Channels: 1.2 mm
 - .6 Steel Top Caps: 0.9 mm
 - .7 Glass Trim (Screw Fixed or Snap-In Types): 0.9 mm
 - .8 Mortar Guard Boxes: 0.8 mm
 - .9 Floor Anchors: 1.6 mm
 - .10 Wall Anchors:
 - .1 Masonry Strap Type: 1.2 mm
 - .2 Masonry Wire Type: 4.0 mm dia.
 - .3 Masonry Stirrup-Strap Type: 1.6 mm
 - .4 Steel/Wood Stud Type: 0.9 mm
 - .5 Steel/Wood Stud Tension and Associated Wall Type: 0.9 mm
 - .6 Existing Masonry/Concrete Wall Type: 0.9 mm
 - .7 Jamb Spreaders: 0.9 mm
 - .8 Primer: CAN/CGSB-1.40-M89 for touch-up only.

2.2 Fabrication

- .1 Fabricate frames as detailed, to Canadian Steel Door and Frame Manufacturers' Association, (CSDFMA) Specifications for Commercial Steel Doors and Frames, 1990; except where specified otherwise. Reinforce frames to suit hardware requirements specified in Section 08710

- Finish Hardware.
- .2 Blank, reinforce, drill and tap doors and frames for mortised hardware. Reinforce doors and frames for surface mounted hardware.
- .3 Mortised cut outs shall be protected with steel guard boxes (may be omitted on gypsum board applications).
- .4 Shop prime cold rolled steel sheet.
- .5 Apply, at factory, touch up primer to doors and frames manufactured from galvanized steel where coating has been removed during fabrication.
- .6 Construct labelled frames as detailed in Follow-up Service Procedures/Factory Inspection Manuals issued by nationally recognized listing agency to individual manufacturers and tested in conformance with CAN4-S104-M. Ensure ratings for frames match doors as minimum requirement. Locate label on frame jamb on hinge side, so it is concealed when door is closed

2.3 Doors

- .1 Make provision for louvres and glazing as indicated and provide necessary glazing stops.
- .2 Fabricate exterior doors to be insulated, bonded core honeycomb construction. Fabricate interior doors to be honeycomb construction.
- .3 Longitudinal edges shall be mechanically interlocked, adhesive assisted. Seams shall be welded, filled and sanded flush.
- .4 Reinforce doors for surface mounted hardware.
- .5 Provide top and bottom of doors with inverted, recessed channels welded to both faces. Provide flush steel top cap on exterior doors.
- .6 Fabricate fire rated door assemblies as detailed in Follow-up Service Procedures/Factory Inspection Manuals issued by nationally recognized listing agency to individual manufacturer and tested in conformance with CAN4-S104-M. Provide labels for fire rated doors.
- .7 Construct rail and stile doors in same manner as flush doors.
- .8 Construct panels to match doors.
- .9 Reinforce panels to prevent oil canning. Install panels with concealed fasteners and reinforce to accommodate hardware as required.
- .10 Fabricate each face sheet for exterior doors from 1.6 mm sheet steel and laminate under pressure to polyurethane or isocyanurate core. Core shall completely fill inside hollow of door.
- .11 Fabricate each face sheet for interior doors from 1.2 mm sheet steel and laminate under pressure to honeycomb core.
- .12 Reinforce, stiffen and sound deaden doors with core laminated to inside faces of panels. Core shall completely fill inside hollow of door.

2.4 Frames

- .1 Cut mitres and joints accurately and weld continuously on inside of frame profile. Welding shall

- conform to CSA W59-1989.
- .2 Grind welded corners and joints to flat plane, fill with metallic paste filler and sand to uniform smooth finish.
 - .3 Provide jamb anchors for fixing at floor.
 - .4 Provide wall anchors immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb. Provide 2 anchors for rebate opening heights up to and including 1500 mm and one additional anchor for each additional 760 mm of height or fraction thereof.
 - .5 Install 3 rubber bumpers on strike jamb for each single door and 2 bumpers at head for pairs of doors.
 - .6 Make provision for glazing as indicated and provide necessary glazing stops. Stops shall be formed channel, 16 mm high, fastened to frame sections with countersunk oval head sheet metal screws.
 - .7 In accordance with O.B.C. Subsection 3.1.8.14, hollow metal screens A, B and C shall have 20 mm high glazing stops on each side of the glass.

PART 3 – EXECUTION

3.1 Installation General

- .1 Install fire labelled doors and frames in accordance with National Fire Codes, Volume 4, produced by National Fire Protection Association (NFPA) 80, most current edition.

3.2 Door Installation

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08710 - Finish Hardware.
- .2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.
 - .1 Hinge side: 1.0 mm
 - .2 Latchside and head: 1.5 mm.
 - .3 Finished floor, top of carpet and thresholds: 13 mm.
- .3 Adjust operable parts for correct function.
- .4 Install louvres.

3.3 Frame Installation

- .1 Set frames plumb, square, level and at correct elevation.
- .2 Secure anchorages and connections to adjacent construction.
- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.
- .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to

frames.

- .5 Install door bumpers.

3.4 Finish Repairs

- .1 Touch up galvanized finish damaged during or after installation with zinc rich primer.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 08 52 10 Aluminum Windows
- .2 Section 08 71 00 Finish Hardware
- .3 Section 16000 Electrical

1.2 Design Criteria

- .1 Design frames and doors in exterior walls to:
 - .1 Accommodate expansion and contraction within service temperature range of -35° to 75°C.
 - .2 Limit deflection of mullions to maximum 1/200th of clear span when tested to ASTM E330 under wind load of 1.2 kpa. Submit certificate of tests performed.

1.3 Hardware Schedule

- .1 Review hardware schedule for aluminum doors as listed in Section 08 71 00 and this Section. Prepare doors for all associated hardware.
- .2 Check drawings and specifications for hardware requirements and advise consultant in writing of any discrepancies.

1.4 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 34 00.
- .2 Indicate each type of door and frame, extrusion profiles, method of assembly, section and hardware reinforcement, locations of exposed fasteners, finishes and location of manufacturer's nameplates. Confirm voltage requirements for automatic sliding door.
- .3 Submit details and calculations for steel reinforcing. Detail drawings and calculations for reinforcing shall bear the signature and stamp of a qualified professional engineer registered in the Province of Ontario.

1.5 Maintenance Data

- .1 Provide maintenance data for cleaning and maintenance of aluminum finishes for incorporation into manual specified in Section 01 73 00.
- .2 Brief maintenance staff regarding proper care, cleaning and general maintenance.

1.6 Warranty

- .1 Warrant work of this Section against defects and deficiencies for period of 5 years for aluminum entrances and 5 years for insulating glass units from date of Substantial Performance. Promptly make good defects and deficiencies which become apparent within warranty period at no expense to Owner. Defects shall include, but not be limited to, leaking, deformation of members, loss of seal in sealed glass units, breakage of glass caused by frame distortions and thermal forces and colouration of finishes.

PART 2 - PRODUCTS

2.1 Materials

- .1 Aluminum extrusions: Aluminum Association alloy AA6063-T5.
- .2 Sheet aluminum: Aluminum Association alloy AA1100 or AA5005 AQ.
- .3 Steel reinforcement: to CAN/CSA-G40.21-M92, grade 300W.
- .4 Fasteners: stainless steel, finished to match adjacent material.
- .5 Clips and anchor straps: aluminum or hot dipped galvanized steel back painted, cadmium plated where in contact with aluminum.
- .6 Glass:
 - .1 Type 1: Insulating glass units to CAN/CGSB-12.8-M90, 25mm thermal, tempered interior and exterior glazed units. Unit to have 6mm Clear Energy Advantage Low E (#2) tempered exterior, 13mm grey warm edge spacer with argon gas, 6mm clear tempered interior, Type 1 glass to be used in exterior entrance framing to vestibule.

Type 2: reserved

Type 3: tempered safety glass to CAN/CGSB-12.1-M90, clear, 6 mm thick. Type 3 glass to be used in interior vestibule doors and interior vestibule framing.
- .7 Glazing materials: neoprene or EPDM gaskets, setting blocks, shims, butyl tape or sealant in accordance with manufacturer's standards.
- .8 Thermal break: manufacturer's standard P.V.C.
- .9 Rust inhibiting primer: CAN/CGSB-1.40-M89.
- .10 Isolation coating: alkali resistant bituminous paint to CAN/CGSB-1.108-M89 and zinc chromate primer to CAN/CGSB-1.132-M90.
- .11 Sealant: CAN/CGSB-19.13-M87, one component, elastomeric, chemical curing, silicone sealant, or CAN/CGSB-19.24-M90, Type 2, Class B, ASTM C 920 Type M, Grade NS, Class 50, Use T, NT, M,A and O multi-component, chemical curing, Dymeric 240 by Tremco Mfg. Co. (Canada) Ltd., as recommended by aluminum door and frame manufacturer. Colour selected by Consultant to match aluminum door frames.
- .12 Joint backing material: polyethylene foam rope, closed cell type, 50% larger than joint.
- .13 Joint primer, surface conditioners and cleaning agents: as recommended by respective glazing and sealing compound manufacturer.
- .14 Air Barrier Membrane: to provide continuous air barrier in exterior building envelope, membrane to tie aluminum entry system to building air/vapour barrier. Membrane to be as manufactured by Tremco ExoAir 110, Bakor, Blueskin SA or W.R. Grace Bituthene, peel and stick application or monolithic fluid applied ExoAir 120 SP by Tremco. Use Proglaze ETA (Engineered Transition Assembly) by Tremco around all doors and window openings.

2.2 Doors and Frames

- .1 Type 1 (Exterior) Doors: Alumicor Series 400A Insuldoor, 51 mm thick, with 102 mm stiles and 98 mm top rail, 260 mm centre rail, 179 mm bottom rail.

Type 2 (Interior) Doors: Alumicor Series 400B Canadiana, 44.5 mm thick, with 102 mm stiles and 98 mm top rail, 260 mm centre rail, 179 mm bottom rail.

- .2 Type 1 (Exterior and Interior) Frames: Alumicor 2200 Series, 50 x 127 mm back section, thermally broken.
- .3 Aluminum Sills: Extruded aluminum sills, full width of opening x depth of entrance framing x 12.7 max. height for handicapped access.

2.3 Aluminum Finishes

- .1 Type 1: clear anodized, Aluminum Association designation AA-C22A31, with a minimum coating thickness of 0.0102 mm.

2.4 Steel Finishes

- .1 Finish steel clips and reinforcing steel with steel primer to CAN/CGSB-1.40-M89.

2.5 Fabrication

- .1 All doors and framing for the entire project to be by same manufacturer.
- .2 Fabricate doors and frames to profiles and face sizes indicated.
- .3 Provide structural steel reinforcement as required, concealed within frames.
- .4 Fit joints tightly and secure mechanically.
- .5 Conceal fastenings.
- .6 Mortise, reinforce, drill and tap doors, frames and reinforcements to receive hardware using templates provided by hardware supplier.
- .7 Take field measurements prior to fabrication or obtain guaranteed dimensions from Contractor.
- .8 Fabricate units square and true. Brace frames to maintain squareness and rigidity during shipment and installation.
- .9 Fit frames with expanded polystyrene insulation.
- .10 Finish steel clips and reinforcement with shop coat primer to CAN/CGSB-1.40-M89.
- .11 Isolate aluminum from following components, by means of isolation coating:
 - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.
 - .3 Wood.
 - .4 Apply heavy coating of bituminous paint or zinc chromate primer to contact surfaces prior to installation.

2.6 Door Hardware

- .1 Supply of door hardware for aluminum doors shall be under Section 08710 Finish Hardware and installed by this section. Hardware Section 08710 shall list all hardware items for aluminum doors to be shop prepped by this Section. The receiving, fitting, installation and leaving in good working condition of all Aluminum Door related hardware is under this Section.

2.7 Hardware Fastenings

- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .2 Exposed fastening devices to match finish of hardware.

PART 3 - EXECUTION

3.1 Door and Frame Installation

- .1 Set frames plumb, square, level at correct elevation in alignment with adjacent work.
- .2 Anchor frames securely at floor, head and jambs.
- .3 Install doors and hardware in accordance with hardware templates and manufacturer's instructions.
- .4 Adjust operable parts for correct function.
- .5 Make allowances for deflection of structure to ensure that structural loads are not transmitted to frames.
- .6 For automatic sliding door, comply with manufacturer's specifications and recommendations for installation of complete door system, including drive mechanism, controls and control switches. Adjust operator and controls for optimum condition and safety. Lubricate operating equipment.

3.2 Glazing

- .1 Glaze aluminum doors and frames in accordance with manufacturer's standards.

3.3 Caulking

- .1 Seal joints between frames and adjacent construction both inside and outside to provide weathertight seal on exterior and air/vapour seal on interior.
- .2 Apply sealant in accordance with Section 07900.

3.4 Hardware Installation

- .1 Supply and install hardware listed in Hardware Schedule.
- .2 Install hardware in accordance with manufacturer's instructions.
- .3 Install cylinders supplied by Section 08 71 00.

End of Section

PART 1 – GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Section Includes

- .1 Provision of all labour, materials, equipment and incidental services necessary to provide wall and ceiling mounted access doors.

1.3 Submittals

- .1 Provide manufacturer's data and independent test reports/approvals for all fire rated access doors.

1.4 Delivery, Storage and Handling

- .1 Deliver all products to the site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- .2 Store products indoors in a clean, dry area, having environmental conditions acceptable to product manufacturer.
- .3 Protect products from damage during storage and installation.

PART 2 - PRODUCTS

2.1 Materials

- .1 Steel for Doors and Frames: 16 gauge, wipe-coat galvanized, commercial grade sheet steel.
- .2 Screws: Zinc plated.
- .3 Springs: Stainless steel.

.4 Gasket: Rubber.

.5 Door Inlay:

.1 For Painted Gypsum Board Finish: Gypsum board to ASTM C36. Thickness shall be the same as on the wall or ceiling in which the access door is to be installed.

2.2 Access Door Types

.1 Non-fire Rated for Gypsum Board Finish: recessed access door for walls or ceilings, for flush installation in gypsum board surfaces where required to conceal door panel. Door panel recessed to receive inlay. Door flange shall be fabricated as a textured galvanized steel taping bead with pre-punched holes; sizes as indicated;

- .1 DW-5015, by Acudor Products Inc.
- .2 Bauco Plus Series, by APS Access Panel Solutions Inc.
- .3 RW Series, by Nystrom Building Products Inc.
- .4 WB-RDW, by Williams Brothers Corporation of America

.2 Non-fire Rated for Ceramic Tile Finish: recessed access door, for flush installation in gypsum board surfaces where required to provide for ceramic tile finish. Door panel recessed to receive inlay and ceramic tile. Door flange shall be fabricated as a recessed (concealed) flange; sizes as indicated;

- .1 AT-5020, by Acudor Products Inc.
- .2 RA Series, by Nystrom Building Products Inc.
- .3 WB-RDW, by Williams Brothers Corporation of America

.3 Non-fire Rated for Paint Finish in Concrete Block: Flush access door, for use in concrete block surfaces where required to provide access; sizes as indicated;

- .1 UF-5000, by Acudor Products Inc.
- .2 NT Series, by Nystrom Building Products Inc.
- .3 WB-SMP, by Williams Brothers Corporation of America

.4 Fire Rated for Concrete Block/Paint Finish: Flush access door, for use in concrete block surfaces where required to provide fire rated access; sizes and fire ratings as indicated;

- .1 FB-5060, by Acudor Products Inc.
- .2 IT Series, by Nystrom Building Products Inc.
- .3 WB-FR, by Williams Brothers Corporation of America

.5 Fire Rated for Gypsum Board/Paint Finish: Flush access door, for use in gypsum board surfaces where required to provide fire rated access; sizes and fire ratings as indicated;

- .1 FB-5060-DW, by Acudor Products Inc.
- .2 UW Series, by Nystrom Building Products Inc.
- .3 WB-FR/DW, by Williams Brothers Corporation of America

2.3 Fabrication

.1 General:

- .1 Manufacture each access door assembly as an integral unit ready for installation.
- .2 Recessed panel: Form face of the door to provide a recess for the application of the finish material. Reinforce the door as necessary to prevent sagging.
- .3 Furnish the number of latches necessary to hold the door in a flush, smooth plane when closed.

- .2 Hinge: Concealed, two-point hinge, non-corroding that allows the door to open 120 degrees.
- .3 Latches: self-latching, tamper-resistant, recessed head, cam latch.

2.4 Finish

- .1 Factory-applied primer.

PART 3 – EXECUTION

3.1 Installation

- .1 Install access doors plumb and square, and flush with finished ceiling, in accordance with manufacturer's instructions.
- .2 Ensure adequate bracing is present for support of access panel frame. Provide additional support as required.
- .3 Adjust operable parts for correct function.

3.2 Location

- .1 For number and room location required, refer to Mechanical plans. Coordinate with Mechanical Subtrade for locations of required ceiling and wall mounted access doors.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 07 21 40 Foam-in-place Insulation
- .2 Section 07 90 00 Sealants
- .3 Section 08 12 00 Aluminum Doors and Frames

1.2 Reference Standards

- .1 CAN/CSA-A440.2-09/A440.3-09, Fenestration Energy Performance.

1.3 Design Criteria

- .1 Design frames and sash to:
 - .1 Accommodate expansion and contraction within service temperature range of -35 to 75 Deg. C.
 - .2 Limit deflection of mullions to 1/175th of clear span when tested to ASTM E330 under wind load of 1.23 kpa. Submit certificate of tests performed.
 - .3 Guard Load: Uniform Linear Load of .75 KN/M or concentrated point load of 1.0 KN per Ontario Building Code Section 4.1.5.15.1(C).
 - .4 Loading within a Guard: Concentrated point load of 0.5 KN per Ontario Building Code Section 4.1.5.15.2.
 - .5 Allow for vertical deflection at head of all windows for structure deflection and seismic movement where applicable.

1.4 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 34 00.
- .2 Indicate materials and details in scale full size for head, jamb and sill, profiles of components, interior and exterior trim, junction between combination units, elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes, fasteners, and caulking. Indicate location of manufacturer's nameplates.
- .3 Design structural steel mullion reinforcing to counteract all imposed loads. Submit reinforcing details and calculations. Detail drawings and calculations for reinforcing shall bear the signature and stamp of a qualified professional engineer registered in the province of Ontario.

1.5 Maintenance Data

- .1 Provide operation and maintenance data for windows for incorporation into manual specified in Section 01 73 00.

1.6 Warranty

- .1 Warrant work of this Section against defects and deficiencies for a period of five years from date of Substantial Performance. Promptly correct defects and deficiencies which become apparent during warranty period without cost to Owner. Defects shall include, but not be limited to, leaking, deformation of members, loss of seal in sealed glass units, breakage of glass caused by frame distortions and thermal forces, mechanical failure and discolouration of finishes.

PART 2 - PRODUCTS

2.1 Materials

- .1 Materials: to CAN/CSA-A440-09 supplemented as follows:
- .2 All windows shall be supplied by same the manufacturer.
- .3 Aluminum extrusions: Aluminum Association alloy AA6063-T5.
- .4 Sheet aluminum: 1.3 mm (.050") thickness, Aluminum Association alloy AA1100 or AA 5005 AQ.
- .5 Steel reinforcement: to CAN/CSA-G40.21-M92, grade 300W.
- .6 Fasteners: stainless steel, finished to match adjacent material.
- .7 Glass:
 - Type 1: Insulating glass units: to CAN/CGSB-12.1-M90, 25mm thermal, tempered interior and exterior glazed units. Unit to have 6mm Clear Energy Advantage Low E (#2) tempered exterior, 13mm grey warm edge spacer with argon gas, 6mm clear tempered interior, sealed space. Use Type 1 glass at all exterior curtain wall (non-window wall) windows, entrance screens indicated on drawings.
- .8 Isolation coating: alkali resistant bituminous paint to CAN/CGSB-1.108-M89 and zinc chromate primer to CAN/CGSB-1.132-M90.
- .9 Rust inhibiting primer: CAN/CGSB-1.40-M89.
- .10 Thermal Break: manufacturer's standard P.V.C., polyurethane or glass reinforced polyamide nylon 6/6 isoweb.
- .11 Glazing gaskets: Polyshim II glazing spline, extruded E.P.D.M. for specific use at all Polyshim II tape applications.
- .12 Glazing Tape: Polyshim II polyisobutylene tape by Tremco (Canada) Ltd.
- .13 Setting Blocks: Neoprene or EPDM Shore 'A' hardness 80-90, width equal to thickness of sealed double glazed unit and 75-100 mm long.
- .14 Sealant: CAN/CGSB-19.13-M87, one component, elastomeric, chemical curing, silicone sealant, or CAN/CGSB-19.24-M90, Type 2, Class B, ASTM C 920, Type M, Grade NS, Class 50, Use T, NT, M, A and O multi-component, chemical curing, Dymeric by 240 Tremco Mfg. Co. (Canada) Ltd., as recommended by aluminum window manufacturer. Colour selected by Consultant to match aluminum window frames.
- .15 Joint backing material: polyethylene foam rope, closed cell type, 50% larger than joint.
- .16 Joint primer, surface conditioners and cleaning agents: as recommended by respective glazing and sealant compound manufacturer.
- .17 Air Barrier Membrane: to provide continuous air barrier in exterior building envelope, membrane to be as manufactured by Tremco ExoAir 110, Monsey Bakor, Blueskin SA or W.R. Grace Bituthene, peel and stick application or monolithic fluid applied ExoAir 120 SP by Tremco. Use Proglaze ETA (Engineered Transition Assembly) by Tremco around all doors and window

openings.

2.2 Window Type and Classification

- .1 Window specifications are based on products of Alumicor Limited. Products of Kawneer Co. Canada Ltd. of similar profile, size and shape are also acceptable subject to the following:
 - .1 Conformance to the requirements of the drawings and specifications.
 - .2 Conformance to the requirements of the Test Reports listed in this Section, and
 - .3 Approval of the Consultant.
- .2 Provide engineered structural steel reinforcing within mullions as required to meet all imposed loads.
- .3 Type 1: Fixed Curtain Wall: Alumicor 2200 series, 51 x 127 (back section), with 51 x 19 mm snap on cap. Type 1 framing to be used at curtain wall framing indicated on drawings.

2.3 Aluminum Finish

- .1 All exposed finishes to be clear anodized, Aluminum Association designation AA-C22A31, with a minimum coating thickness of 0.0102 mm.

2.4 Fabrication

- .1 Fabricate in accordance with CAN/CSA-A440-M90 supplemented as follows:
- .2 Take field measurements prior to fabrication or obtain guaranteed dimensions from Contractor.
- .3 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
- .4 Fit frames with expanded polystyrene insulation.
- .5 Brace frames to maintain squareness and rigidity during shipment and installation.
- .6 Provide structural steel reinforcement as required, concealed within frames.
- .7 Finish steel clips and reinforcement with shop coat primer to CAN/CGSB-1.40-M89.
- .8 Isolate aluminum from following components, by means of isolation coating:
 - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.
 - .3 Wood.
 - .4 Apply heavy coating of bituminous paint or zinc chromate primer to contact surfaces prior to installation.
- .9 Fabricate insulated aluminum panel profiles where indicated on window schedule and architectural details. Seal all edges, installation to be air and water tight. Finish to match adjacent window framing. Fully bond/laminate metal facings to the rigid insulation.

2.5 Air Barrier and Vapour Retarder

- .1 Equip window frames with site installed air barrier and vapour retarder material for sealing to

building air barrier and vapour retarder as follows:

- .1 Material: compatible with, building air barrier and vapour retarder material.
- .2 Material width: adequate to permit sealing to building air barrier and be returned into glazing pockets or provide a continuous seal with glazing frame.
- .3 Co-ordinate with foam-in-place insulation section 07214

PART 3 - EXECUTION

3.1 Window/Door Installation

- .1 Install in accordance with CAN/CSA-A440-M90 and to reviewed shop drawings. Make allowance for deflection of structural elements.
- .2 Provide all fastenings and anchors direct through frame to structure. No strap anchors will be permitted.
- .3 Conceal all fastenings of window components from view.

3.2 Caulking

- .1 Seal joints between frames, sills and other components in this Section and adjacent construction both inside and outside to provide weathertight seal on exterior and air/vapour seal on interior.
- .2 Apply sealant in accordance with Section 07 90 00.

End of Section

PART 1 – GENERAL

1.1 Work Included

- .1 Supply of all finishing hardware for aluminium, steel and wood doors.
- .2 It is intended that the following list of hardware will cover all finish hardware to complete the project. Omissions and discrepancies shall be brought to the Architect's attention during the bidding period.

1.2 Related Sections

- .1 06 20 00 Finish Carpentry
- .2 08 11 10 Steel Doors and Frames
- .3 08 12 00 Aluminum Doors and Frames
- .4 Division 16 Electrical

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Products Supplied But Not Installed By This Section

- .1 Power supplies, compressor/control boxes, junction boxes installed by Division 16.

1.5 References

- .1 Recommended locations for Architectural Hardware for Standard Steel Doors and Frames - Door and Hardware Institute
- .2 Recommended locations for Architectural Hardware for Flush Wood Doors – Door & Hardware Institute

- .3 NFPA 80-Standard for Fire Doors and Windows
- .4 Sequence Format for Hardware Schedule – Door & Hardware Institute
- .5 Key Systems and Nomenclature - Door & Hardware Institute
- .6 Abbreviations and Symbols used in Architectural Door and Hardware Schedules and Specifications – Door & Hardware Institute

1.6 Submittals

- .1 **Finish Hardware Schedule:**
Prepare and submit within ten (10) days of a receipt of a purchase order, eight (8) complete detailed hardware schedules prepared in vertical format as detailed in Reference 1.5.3.
- .2 **Product Data:**
Provide in a three ring binder six (6) copies of product data sheets with the finish hardware schedule showing all items of hardware to be used on the project.
- .3 **Samples:**
When requested in writing, provide (to the Architect's Office) one sample of each hardware item complete with fasteners, within twenty (20) calendar days of award of a purchase order. Samples to be clearly labeled with their hardware schedule designation and manufacturers' name and model number. Samples may be incorporated into the work.
- .4 **Templates:**
Furnish templates within ten (10) days after award of a purchase order.
- .5 **Keying Schedule**
Provide three (3) copies of keying schedule for review as directed by Owner. Include all special keying notes and stamping instructions. Locks and cylinders are not to be ordered until the key schedule has been approved by the Architect.
- .6 **Wiring Diagrams**
Furnish a written description of the functional use of all electrical hardware. Include door and frame elevations showing the location of each item of electrical hardware to be installed, including a diagram showing number and size of all conductors.
- .7 **Operations and Maintenance Data**
Prior to Substantial Performance, furnish to the owner, three (3) copies of an Owner's operation and maintenance manuals in a three ring binder with the following information:
 - .1 Maintenance instructions for each hardware item
 - .2 Catalogue cut sheets and Product Specifications or each product
 - .3 Parts list for each product
 - .4 Copy of final "as-built" finish hardware schedule
 - .5 Copy of final keying schedule

1.7 Quality Assurance

- .1 Review installation procedures with the Hardware Distributor's Installer(s). Hold instruction meetings with the Installer(s) prior to installation and subsequent review meetings during the installation period. Submit minutes of meetings to the Architect.

- .2 Substitutes
Only approved products specified will be accepted. Make substitution request in accordance with Division 1. Include product data and indicate benefit to the project.
- .3 Supplier Qualifications
Successful Hardware Distributor to have a minimum of five (5) years experience in the door and hardware industry. The Hardware Distributor to have on staff an Architectural Hardware Consultant (A.H.C.) who will be responsible for scheduling, detailing, ordering and co-ordination of the finishing hardware for this project. This individual shall be required for jobsite visits if so requested by the Architect, Owner and or Hardware Installer for any installation problems that may occur.
- .4 Pre-Installation Meeting for Hardware: Prior to installation of hardware, arrange a meeting between Manufacturer, Hardware Distributor, Hardware Installers and related trades to review materials, procedures and coordinating related work. Provide mock-up of installed hardware for review by the Architect at this meeting. Where Ingersoll Rand Security & Safety products are specified, products shall be furnished and installed by an authorized Ingersoll Rand Security & Safety distributor to insure quality compliance, service and warranty. All Ingersoll Rand products are to be included in the mock-up. An Architectural Hardware Consultant (A.H.C.) from Ingersoll Rand Security & Safety will assist the Consultant with the review of the mock-up. The approved mock-up is to set the standard of hardware installation for the remainder of the project.
- .5 Finish and security hardware, auto operators to be installed by an Ingersoll Rand Security & Safety distributor and systems Integrator; the distributor shall employ and use Ingersoll Rand trained and certified hardware, auto operator and security system installers.

1.8 Delivery, Storage and Handling

- .1 Marking and Packaging
All cartons shall be marked with heading number, door number, and key-set symbol where applicable in original packaging provided by the manufacturer. Pack packaged hardware in suitable wrappings and containers to protect it from damage during shipping and storage. Accessories, fastening devices and other loose items shall be enclosed with each applicable item of hardware.
- .2 Delivery
Deliver hardware to related trades.
- .3 Storage
Store in a clean, dry room with lockable man door and adequate shelving to permit organization so item numbers are readily visible.

1.9 Warranty

- .1 Provide warranties by the accepted manufacturers:

| Hardware Item | Length of Warranty |
|--------------------------|--------------------|
| Mortise Hinges | Lifetime |
| Pivot Sets | 3 yrs. |
| Locks | 7 yrs. |
| Keypad Locks | 2 yrs. |
| Exit Devices | 5 yrs. |
| Door Closers -mechanical | 10 yrs. |

| | |
|--|----------|
| Door Operators - Electro mechanical | 2 yrs. |
| Door Hold open Devices - Electro mechanical | 2 yrs. |
| Overhead stops/holders | 2 yr. |
| Floor/Wall stops | 2 yr. |
| Electric Strikes/Key Switches/Power Supplies | 2 yr. |
| Electromagnetic Lock Coils | Lifetime |

1.10 Maintenance

- .1 Maintenance Service
After the building is occupied arrange an appointment with the Owner for instruction of proper use, servicing, adjusting and lubrication of hardware furnished. Submit to the Consultant a list of attendees and meeting date.
- .2 Extra Materials
The following items to be transferred by the General Contractor to the Owner in proper manufacturers cartons once the job has been completed:
 - .1 3 of each installation tool used for locks/passage/privacy, all type of door closers, and all exit devices.

PART 2 – PRODUCTS

2.1 Manufacturers

Refer to products listed in the finishing hardware schedule.

2.2 Materials

- .1 Screws and Fasteners:
All screws shall be matching finish to their product and shall be Manufacturer's standard.
 - .1 Furnish with finish hardware all necessary screws, bolts and other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use. Factory furnished Fasteners shall be used to install all Hardware. Tech Screws or substitute fasteners are not acceptable and will be rejected.
 - .2 Furnish fastenings where necessary with expansion shields, toggle bolts and other anchors designated by the Architect according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer. All closers and exit devices on wood doors shall be thru-bolted. All thresholds shall be fastened with machine screws and anchors. Where specified in the hardware sets, security type fasteners of the type called for are to be supplied.
 - .3 Design of all fastenings shall harmonize with the hardware as to material and finish.

2.3 Finishes

- .1 Unless other wise specified, all finishes to be brushed chrome (626).
- .2 Finishes are specified as follows:

| <u>Item</u> | <u>BHMA#</u> | <u>Description</u> | <u>Base Materials</u> |
|---------------------|--------------|------------------------|-----------------------|
| Hinges | 630 | satin, stainless steel | stainless steel |
| Pivots | 689 | powder coat aluminum | steel |
| Lock Trim | 626 | satin chrome plated | brass/bronze |
| Exit Devices | 626 | satin chrome plated | brass/bronze |
| Dr Closer | 689 | powder coat aluminum | steel |
| Dr Pulls | 630 | satin stainless steel | stainless steel |
| Protective Plate | 630 | satin stainless steel | stainless steel |
| Door Stops/ Holders | | | |
| Overhead | 630 | satin stainless steel | stainless steel |
| Wall/Floor | 626 | satin chrome plated | brass/bronze |
| Thresholds | 628 | anodized aluminum | aluminum |
| Weatherstrip | 628 | anodized aluminum | aluminum |
| Miscellaneous | | | |
| Coat hooks | 626 | satin chrome plated | brass/bronze |
| Signage | | BLK black | plastic |
| Mullions | 628 | anodized aluminum | steel |
| Key Switches | 630 | satin stainless steel | stainless steel |
| Electric Strikes | 630 | satin stainless steel | stainless steel |
| Magnetic Locks | 628 | anodized aluminum | steel |

2.4 Cylinders, Keying Systems and Key Controls

- .1 Meet with the Consultant and Owner to finalize keying requirements and obtain keying instructions in writing as outlined in Division 1. Interior locks and cylinders shall be furnished in a new Schlage masterkey system, Everest keyway.
- .2 Provide temporary construction keying system during construction period. Permanent keys will be furnished to the Owner's Representative prior to occupancy. The Owner will instruct the General Contractor to void the operation of the construction keys.
- .3 Permanent cylinders to be keyed by factory, combined in sets or subsets, master keyed or grand master keyed, as directed by Owner. Permanent keys and cylinders shall be marked with the keyset symbol on all keyblanks for identification. These visual key control marks or codes will not include the actual key cuts.
- .4
 - .1 Keying Handover: Prior to handing keys to the Owner, the Contractor shall organize the keys as follows:
 - .1 For each set of keys attach a hard plastic tag capable of being labeled.
 - .2 Each plastic tag is to have typewritten or computer generated labels indicating the relevant room number and room name.
 - .3 All keys other than the 2 keys per lockset; Grand Master keys, Master keys, AA1 keys and A1 keys are to be labeled GMK, MKAA, AA1 - Staff Access and A1 - Main Entrance respectively.
 - .4 Submit a list of the tag labels for approval prior to the start of the labeling process.
 - .2 An itemized transmittal is to accompany all keys to be handed over.

- .3 All keys complete with labeled tags are to be arranged on the markers and hooks in the key cabinet in room sequence starting with Room 101. Provide complete written cross-index system. Provide one each key cabinet and hinged panel type cabinet for wall mounting as noted in detailed hardware schedule. Key cabinet is to be properly secured to a wall in a location to be determined by the Board.
- .5 Key Material: Provide manufacturer's standard embossed keys of nickel silver to ensure durability. Key Quantity: Furnish keys/tools in the following quantities:

| | |
|---|-------------------------|
| Keys per lockset | 2 |
| Grand Master keys per grand master group. | 6 |
| Master keys per master group. | 8 |
| AA1 keys | 1 per room and 6 spares |
| A1 keys | 1 per room and 6 spares |
| Extractor tools | 3 |
| Padlocks | 4 |

All keying requirements per Owner's Keying Schematics (attached).

PART 3 – EXECUTION

3.1 Examination

- .1 Ensure that doors and frames are properly prepared and reinforced to receive finish hardware prior to installation.
- .2 Ensure that door frames and finished floor are sufficiently plumb and level to permit proper engagement and operation of hardware.
- .3 Submit in writing a list of deficiencies determined as part of inspection required in 3.1.1 and 3.1.2 to the Consultant prior to installation of finished hardware.

3.2 Installation

- .1 All installation by Section 06 20 00 is to be executed by pre-approved Installer with a minimum of five (5) years experience in the installation of finishing hardware in accordance with these specifications . Provide verification of the Installer's qualifications to the Consultant for approval. All installers are to attend review meetings with the hardware manufacturers and Hardware Distributor. Installation by the General Contractor's appointed installer of finishing hardware will be reviewed and approved by the Hardware Consultant .
- .2 Install hardware at mounting heights as specified in the manufacturers templates or specific references in approved hardware schedule or approved elevation drawings.
- .3 Where mounting height is not otherwise specified, install hardware at mounting heights as indicated in 1.5.1, 1.5.2.
- .4 Install hardware using only manufacturer supplied and approved fasteners in strict adherence with manufacturers published installation instructions.
- .5 Ensure that all locksets / latchsets / deadlocks are of the correct hand before installation to ensure that the cylinder is in the correct position. Handing is part of installation procedure.

- .6 Ensure that all exit devices are of the correct hand and adjust device cam for proper outside trim function prior to installation. Handing is part of installation procedure.
- .7 Follow all manufactures installation instructions. Adjustment is inclusive of spring power, closing speed, latching speed and back-check at the time of installation.
- .8 Delayed action door closers are to be adjusted to forty (40) second delay for handicapped accessibility and movement of materials. Time period to be approved by Owner.
- .9 Install head seal prior to installation of “PA”-parallel arm mounted door closers and push side mounted door stops/holders.
- .10 Counter sink through bolt of door pull under push plate during installation.
- .11 Mount all closers, automatic operators and hold-open devices with through bolts, as indicated in the finish hardware schedule.

3.3 Field Quality Control

- .1 Perform bi-monthly on-site inspections during hardware installation and provide inspection reports listing progress of work, unacceptable work and corrective measures. Repair or replace as directed by the Consultant.
- .2 Upon completion of finish hardware installation, the Consultant, Hardware Manufacturer, Hardware Distributor, Installer, and General Contractor shall do a thorough “ walk through” of the project to determine that all finishing hardware are; 1) furnished and installed in compliance with the specification, 2) final installation, adjustment, and correct applications are acceptable to the Owner. In the event the Consultant rejects any product or installation, the hardware distributor shall correct the condition at no expense to the Owner, until the Consultant gives final acceptance. The Hardware Distributor and the Contractor shall record and provide a list of all hardware deficiencies. The Manufacturer shall re-inspect when notified as to the clearing of deficiencies. The Hardware Distributor and the General Contractor shall certify in writing that all hardware items and their installation are in accord with requirements of specification. Final inspection must ensure all hardware items operate as per manufacturers requirements. Coordinate final inspections with the Manufacturer’s representatives as required to establish warranties. Submit report to the Consultant and Owner.

3.4 Adjusting and Cleaning

- .1 Check and make final adjustments to each operating item of hardware on each door to ensure proper operation and function.
- .2 All hardware to be left clean and free of disfigurements.
- .3 Instruct owner personnel in the proper operation, adjustment and maintenance of hardware.
- .4 Check all locked doors against approved keying schedule.

3.5 Protection

- .1 Protect hardware from damage during construction period by removing and reinstalling or where necessary, using temporary hardware to maintain finish in new condition and maintain Manufacturers warranty.

End of Section

Stayner - C.I. - Phase II Upgrades **7578 Highway 26, Stayner, Ontario**

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Submittal Date: **January 7, 2019**



Upper Canada Specialty Hardware
7100 Warden Ave. Unit 1
Markham, Ont., L3R8B5

Stayner - C.I. - Phase II Upgrades
7578 Highway 26, Stayner, Ontario

Submittal Date: January 7, 2019

Openings Schedule

| Hardware Group | Qty | Opening Number(s) | Location 1 | To/ From | Location 2 | Hand | Nominal Width | Nominal Height | Door Thickness | Door Mat'l | Frame Mat'l | Label |
|----------------|-----|-------------------|-----------------|----------|-----------------|-----------|---------------|----------------|----------------|------------|-------------|--------|
| 001 | 1 | D01 | EXTERIOR | FROM | VESTIBULE C104A | LHR | 1050 | 2150 | 57 | AL | AL | |
| 002 | 1 | D02 | EXTERIOR | FROM | VESTIBULE C104A | LHR | 1050 | 2150 | 57 | AL | AL | |
| 002 | 1 | D03 | EXTERIOR | FROM | VESTIBULE C104A | RHR | 1050 | 2150 | 57 | AL | AL | |
| 003 | 1 | D04 | VESTIBULE C104A | FROM | LOBBY C104 | RHR | 1050 | 2150 | 45 | AL | AL | |
| 003 | 1 | D05 | VESTIBULE C104A | FROM | LOBBY C104 | LHR | 1050 | 2150 | 45 | AL | AL | |
| 004 | 1 | D06 | VESTIBULE C104A | FROM | LOBBY C104 | LHR | 1050 | 2150 | 45 | AL | AL | |
| 005 | 1 | D07 | LOBBY C104 | FROM | GYMNASIUM | LHRA/RHRA | 860, 860 | 2024 | 45 | HM | HM | 45 MIN |



Upper Canada Specialty Hardware
 7100 Warden Ave. Unit 1
 Markham, Ont., L3R8B5

Stayner - C.I. - Phase II Upgrades
 7578 Highway 26, Stayner, Ontario

Submission Date: January 7, 2019

Hardware Schedule

Heading #001

1 Single door D01, EXTERIOR FROM VESTIBULE C104A

LHR

1050 x 2150 x 57 - AL DR x AL FR

CONFIRM DOOR SIZE & THICKNESS

| | | | |
|---|--------------------|---|-----------|
| 4 | Standard Hinge | STSCB1399 127 x 114 NRP C32D (4 Hinges Per Leaf) | C32D |
| 1 | Electric Strike | 9600-24VDC-630-LBM Fail Secure | 630-LBM |
| 1 | Power Supply | BPS-24-1 | |
| 1 | Cylinder | 1E72(Std.) 626 | 626 |
| 1 | Const Core | Construcion Core White | White |
| 1 | Exit Device | 31-8504 J Less Trim LHR LC C26D/C32D 1050 | C26D/C32D |
| 1 | Door Pull | GSH 1180-2 #4B Mtg (57mm Door) | C32D |
| 1 | Auto Operator | 4000 c/w On/Off/HO Toogle (Push) 628 | 628 |
| 2 | Actuator | CM-46/4 C32D | C32D |
| 2 | Mounting Box | CM-43LP | |
| 1 | Switching Network | SA1 | |
| 1 | Overhead Door Stop | 105S C32D (Set for 110 Deg.) | C32D |
| 1 | Threshold | CT-46 x 1050 | |
| 1 | Weatherstripping | Weatherstrip - By Aluminum Door Supplier | |
| 1 | Door Sweep | W-24S-CA x 1050 | CA |
| 1 | Opening Schematic | Opening Schematic - By UC Access | |

NOTE:

- 120V & CONDUIT WITH PULL STRINGS FOR ALL ELECTRICAL DEVICES BY ELECTRICAL CONTRACTOR.
- LOW VOLTAGE WIRING BY AUTO OPERATOR SUPPLIER.
- INSIDE PUSH BUTTON TO BE TIED INTO ELECTRICAL STRIKE LATCH BOLT MONITOR (LBM) AND TO BE ALWAYS ACTIVE.
- OUTSIDE PUSH BUTTON TO BE ACTIVATED BY TIME SCHEDULE OR BY LBM WHEN EXIT DEVICE IS DOGGED (UNLOCKED). WHEN EXIT DEVICE IS UNDOGGED (LOCKED) OUTSIDE PUSH BUTTON IS DEACTIVATED.

| | | |
|--|---|--|
| UPPER CANADA SPECIALTY HARDWARE LIMITED | Upper Canada Specialty Hardware 7100 Warden Ave. Unit 1 Markham, Ont., L3R8B5 | Stayner - C.I. - Phase II Upgrades 7578 Highway 26, Stayner, Ontario Submittal Date: January 7, 2019 |
|--|---|--|

Heading #002

- 1 Single door D02, EXTERIOR FROM VESTIBULE C104A LHR
- 1 Single door D03, EXTERIOR FROM VESTIBULE C104A RHR

1050 x 2150 x 57 - AL DR x AL FR

| | | | |
|---|--------------------|---|------|
| 8 | Standard Hinge | STSCB1399 127 x 114 NRP C32D (4 Hinges Per Leaf) | C32D |
| 1 | Exit Device | 31-8510 J LHR C32D 1050 x 2150 Door | C32D |
| 1 | Exit Device | 31-8510 J RHR C32D 1050 x 2150 Door | C32D |
| 2 | Door Pull | GSH 1180-2 #4B Mtg (57mm Door) | C32D |
| 2 | Surface Closer | 4040XP EDA TB AL | AL |
| 2 | Mounting Plate | 4040XP-18PA AL | AL |
| 2 | Spacer | 4040XP-61 AL | AL |
| 2 | Overhead Door Stop | 105S C32D (Set for 110 Deg.) | C32D |
| 2 | Threshold | CT-46 x 1050 | |
| 2 | Weatherstripping | Weatherstrip - By Aluminum Door Supplier | |
| 2 | Door Sweep | W-24S-CA x 1050 | CA |

Heading #003

- 1 Single door D04, VESTIBULE C104A FROM LOBBY C104 RHR
- 1 Single door D05, VESTIBULE C104A FROM LOBBY C104 LHR

1050 x 2150 x 45 - AL DR x AL FR

| | | | |
|---|--------------------|--|------|
| 8 | Standard Hinge | CB1368 127 x 114 C26D (4 Hinges Per Leaf) | C26D |
| 2 | Door Pull | GSH 1180-2 x 5036-2 B to B/#4B Mtg (Confirm Stile Size Prior To Ordering) | C32D |
| 2 | Surface Closer | 4040XP EDA TB AL | AL |
| 2 | Mounting Plate | 4040XP-18PA AL | AL |
| 2 | Spacer | 4040XP-61 AL | AL |
| 2 | Overhead Door Stop | 105S C32D (Set for 110 Deg.) | C32D |



Upper Canada Specialty Hardware
7100 Warden Ave. Unit 1
Markham, Ont., L3R8B5

Stayner - C.I. - Phase II Upgrades
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Submission Date: January 7, 2019

Heading #004

1 Single door D06, VESTIBULE C104A FROM LOBBY C104

LHR

1050 x 2150 x 45 - AL DR x AL FR

| | | | |
|---|--------------------|--|------|
| 4 | Standard Hinge | CB1368 127 x 114 C26D (4 Hinges Per Leaf) | C26D |
| 1 | Door Pull | GSH 1180-2 x 5036-2 B to B/#4B Mtg (Confirm Stile Size Prior To Ordering) | C32D |
| 1 | Auto Operator | 7000 c/w On/Off/HO Toggle (Push) 628 | 628 |
| 2 | Actuator | CM-46/4 C32D | C32D |
| 2 | Mounting Box | CM-43LP | |
| 1 | Overhead Door Stop | 105S C32D (Set for 90 Deg.) | C32D |
| 1 | Opening Schematic | Opening Schematic - By UC Access | |

NOTE:

- 120V & CONDUIT WITH PULL STRINGS FOR ALL ELECTRICAL DEVICES BY ELECTRICAL CONTRACTOR.
- LOW VOLTAGE WIRING BY AUTO OPERATOR SUPPLIER.

Heading #005

1 Pair of doors D07, LOBBY C104 FROM GYMNASIUM

LHRA/RHRA

860, 860 x 2024 x 45 - HM DR x HM FR - 45 MIN

REMOVABLE HARDWARE MULLION

| | | | |
|---|-------------------|---|------------|
| 8 | Standard Hinge | CB1901R 114 x 101 C26D (4 Hinges Per Leaf) | C26D |
| 1 | Cylinder | 1E74(Std. C208 626 (For Removable Mullion) | 626 |
| 2 | Cylinder | 1E74(Std.) C208 626 | 626 |
| 3 | Const Core | Construcion Core White | White |
| 1 | Removable Mullion | 12-L980 LC CP | CP |
| 1 | Exit Device | 8813 F ETL LHR LC C26D/US32D 860 | C26D/US32D |
| 1 | Exit Device | 8813 F ETL RHR LC C26D/US32D 860 | C26D/US32D |
| 2 | Surface Closer | 4040XP S CUSH TB AL | AL |
| 2 | Kick Plate | GSH 80A C32D (200 x 820) TM | C32D |
| 1 | Weatherstripping | W-22-BL x 5800 | BL |
| 2 | Door Sweep | W-24S-CA x 820 | CA |

NOTE:

- CONFIRM DOOR SIZES PRIOR TO ORDERING HARDWARE



Upper Canada Specialty Hardware
7100 Warden Ave. Unit 1
Markham, Ont., L3R8B5

Stayner - C.I. - Phase II Upgrades
7578 Highway 26, Stayner, Ontario

Submission Date: January 7, 2019

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 08 11 10 Steel Doors and Frames

1.2 Reference Standards

- .1 CAN/CSA-A440-M90, Windows.

1.3 Design Criteria

- .1 Design frames and sash to:
 - .1 Accommodate expansion and contraction within service temperature range of -35 to 75 Deg. C.
 - .2 Limit deflection of mullions to 1/175th of clear span when tested to ASTM E330 under wind load of 1.2 kpa. Submit certificate of tests performed.

1.4 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 34 00.
- .2 Indicate materials and details in scale full size for head, jamb and sill, profiles of components, interior and exterior trim, junction between combination units, elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes, fasteners, and caulking. Indicate location of manufacturer's nameplates.
- .3 Design structural steel mullion reinforcing to counteract all imposed loads. Submit reinforcing details and calculations. Detail drawings and calculations for reinforcing shall bear the signature and stamp of a qualified professional engineer registered in the province of Ontario.

1.5 Warranty

- .1 Warrant work of this Section against defects and deficiencies for a period of five years from date of Substantial Performance. Promptly correct defects and deficiencies which become apparent during warranty period without cost to Owner. Defects shall include, but not be limited to, leaking, deformation of members, loss of seal in sealed glass units, breakage of glass caused by frame distortions and thermal forces, mechanical failure and discolouration of finishes.

PART 2 - PRODUCTS

2.1 Glass Materials: This Section to supply glazing products to other related Sections unless noted otherwise.

- .1 **Type 1:** For interior fire rated doors and screens, 1 Hour fire rated, impact safety rated glazing. Colourless, wireless, optically clear and free from distortion. Glazing to meet 1 hour fire rating when tested in accordance with CAN/ULC-S104 and CAN/ULC-S101. Glazing to provide smoke and flame barrier and protection against radiant and conductive heat transfer with limited temperature rise on the unexposed face. Test glass to meet specified fire rating. Properties as follows:
 - .1 Impact Safety rated: tempered glass to ASTM C1048 and ANSI Z97.1. Category I and II impact rating.

- .2 Thickness: varies
- .3 Weight: 12.5 kg per square meter.
- .4 Daylight transmission: 88%.
- .5 STC Rating: 35 dB.
- .6 Labeling: each pane of Fire Rated Glass to bear a permanent, non-removable label of Underwriters Laboratories and/or Intertek Testing Services (Warnock-Hersey) certifying it for use in tested and rated fire protective assemblies.
- .7 Bite: minimum allowable bite 12.7 mm.
- .8 Provide fire rated glazing accessories for installation of fire rated glass.
 - .1 Glazing Tape: closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to effect an air and vapour seal.
 - .2 Setting Blocks: calcium silicate; match the glass thickness by 100 mm long x 5 mm thick.
 - .3 Spacers: neoprene or other resilient blocks of 40 to 50 Shore A durometer hardness, adhesive-backed on one face only, tested for compatibility with specified glazing compound.
 - .4 Silicone sealant: one part neutral curing silicone, medium modulus sealant, Type S; Grade NS, Class 25 with additional movement capability of 50 percent in both extension and compression (total 100 percent). Use Exposure: NT. Uses: substrates G, A, and O as applicable.

2.2 Installation Materials

- .1 Setting blocks: neoprene or EPDM or silicone, 80-90 Shore A durometer hardness to ASTM D2240. To suit glazing method, glass light weight and area. Length of 25 mm for each square meter of glazing. Minimum 100 mm x width of glazing rabbet space minus 1.5 mm x height.
- .2 Spacer shims: neoprene or silicone, 50-60 Shore A durometer hardness to ASTM D2240. 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.
- .3 Glazing tape:
 - .1 Preformed butyl compound with integral resilient tube spacing device, 10-15 Shore A durometer hardness to ASTM D2240. Coiled on release paper. Black colour.
 - .2 Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume 2 %, designed for compression of 25 %.
 - .3 Glazing splines: resilient polyvinyl chloride or silicone, extruded shape to suit glazing channel retaining slot, colour as selected.
 - .4 Lock-strip gaskets: to ASTM C542.
- .4 Sealant compound: one component compound, to CAN/CGSB-19.13-M87, Class 2-25 and 2-40, ASTM C 920 Type S, Grade NS, Class 25, Use T, NT, M, A, I Class II and O gun grade, clear colour. Tremsil 200 by Tremco Ltd.
- .5 Primer-sealers and cleaners: to glass manufacturer's standard.

2.4 Fabrication

- .1 Take field measurements prior to fabrication or obtain guaranteed dimensions from Contractor.
- .2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.

PART 3 - EXECUTION

3.1 Workmanship

- .1 Conform to recommendations of Glazing Manual 1990, Flat Glass Marketing Association, except as specified herein.
- .2 Glaze hollow metal doors and screens and wood doors.
- .3 Remove protective coatings and clean contact surfaces with solvent and wipe dry.
- .4 Apply primer-sealer to contact surfaces.
- .5 Place setting blocks as per manufacturer's instructions.
- .6 Install glass, rest on setting blocks, ensure full contact and adhesion at perimeter.
- .7 Install removable stops, without displacing tape or sealant.
- .8 Provide edge clearance of 3 mm minimum.
- .9 Insert spacer shims to center glass in space. Place shims at 600 mm oc and keep 6 mm below sight line.
- .10 Apply sealant to uniform and level line, flush with sightline and tooled or wiped with solvent to smooth appearance.
- .11 Do not cut or abrade tempered glass.
- .12 Install wired glass with wire parallel to sides of openings.

3.2 Glazing Schedule

- .1 Provide Glass types for installation at the following locations:
 - .1 **Type 1** – Interior glazed openings in Non Fire Rated metal or Non Fire Rated wood doors

3.3 Interior Glazing

- .1 Dry method - tape/tape:
 - .1 Cut glazing tape to proper length and install against permanent stop, projecting 1.5 mm above sightline.
 - .2 Place glazing tape on free perimeter of glass in same manner described above.
 - .3 Trim off excess tape to sightline.

.2 Combination method - tape/sealant:

- .1 Cut glazing tape to proper length and install against permanent stop, projecting 1.5 mm above sightline.
- .2 Fill gap between glass and applied stop with sealant to depth equal to bite of frame on glass to uniform and level line.
- .3 Trim off excess tape to sightline.

.3 Fire Rated Hollow Metal Doors and Screens;

- .1 Set glass in fire rated metal doors and screens on continuous setting blocks with 3 mm gap between glazing stop glass and embed in glazing compound in accordance with ANSI/NFPA 80-1995 and NBC requirements. Strike and point exposed joints between metal and glass or install glass in accordance to ULC tested proprietary methods of installation.

3.4 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Remove traces of primer, caulking. Remove glazing materials from finish surfaces.
 - .3 Remove labels.
 - .4 Clean glass and mirrors using approved non-abrasive cleaner in accordance with manufacturer's instructions.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

3.5 Protection

- .1 Protect installed products and components from damage during construction.
- .2 After installation, mark each light with an "X" by using removable plastic tape or paste.
 - .1 Do not mark heat absorbing or reflective glass units.
- .3 Repair damage to adjacent materials caused by glazing installation

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 05 41 00 Structural Steel Stud Framing
- .2 Section 09 22 16 Non-load Bearing Wall Framing
- .3 Section 07 21 40 Foam-in-place Insulation
- .4 Section 07 21 16 Blanket Insulation
- .5 Division 15

1.2 Reference Standards

- .1 Do work in accordance with CAN/CSA A82.31-M91 except where specified otherwise.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Samples

- .1 Submit samples in accordance with Section 01340.
- .2 Submit manufacturer's full range colour samples of acoustic panel fabric for colour selections by Consultant.

1.5 Shop Drawings

- .1 Submit shop drawings for acoustic panels in accordance with Section 01 34 00.
- .2 Show panel construction, materials, profiles, sections and layout on walls. Indicate method of mechanical attachment and attachment hardware.

PART 2 - PRODUCTS

2.1 Gypsum Board – Refer to Wall Type Legends on Architectural Drawings.

- .1 Standard gypsum board : to CAN/CSA A82.27-M91 regular, 13 mm and 15.9 mm thick at locations indicated on drawings and Room Finish Schedule, 1200 mm wide x maximum practical length, ends square cut, edges tapered.

- .2 Fiber-reinforced board: Fiberock panel as manufactured by CGC, 15.9 mm thick, 1200 mm wide x maximum practical length, ends cut square, edges tapered. Refer to drawings and Room Finish Schedule for locations.
- .3 Exterior Sheathing Board: 12.7mm and 16mm Densglass Gold Exterior Guard to ASTM C931, C1177 and C1278, glass mat exterior sheathing board as manufactured by G-P Gypsum, 1220mm wide x maximum practical length. Apply glass mat gypsum sheathing board to exterior of metal stud and furring systems with approved Type S bugle-head screw fasteners at maximum 300mm OC spacing.

2.2 Metal Furring and Suspension Systems

- .1 Metal furring channels, runners, hangers, tie wires, inserts, anchors: to CSA A82.30-M1980 (R1992), galvanized.
- .2 Furring channels: galvanized sheet steel, minimum 0.91 mm (20 gauge) overall thickness, zinc coating Z275, screw channels, 66.7 mm wide x 22.2 mm deep. Bailey Metal Products Limited D-1001 Drywall Furring Channel or approved equal.
- .3 Runner channels: galvanized sheet steel, minimum 1.64 mm overall thickness, zinc coating Z275, 38.1 mm high with 19 mm flanges, for primary furring member in suspended ceilings and as horizontal stiffeners or bracing in metal stud systems.
- .4 Hangers: 4.8 mm nominal diameter mild steel rod.
- .5 Tie wire: 1.60 mm nominal diameter galvanized, soft annealed steel.
- .6 Retainer studs for rigid insulation: Bailey Metal Products Limited D-1005 Retainer Tee Stud or approved equal.

2.3 Fastenings and Adhesives

- .1 Screws: to CAN/CSA A82.31- M91, self-drilling, self-tapping gypsum board screws, 25.4 mm long #6 for single layer application, 41.3 mm long #7 for double layer application.

2.4 Accessories

- .1 Casing beads, corner beads, fill type: 0.5 mm base thickness commercial grade sheet steel with Z275 zinc finish to ASTM A525-86, perforated flanges; one piece length per location.
 - .1 Corner bead: galvanized steel sheet, minimum 0.59 mm overall thickness zinc coating Z275 ASTM A525M, minimum width of flanges 31.8 mm for 15.9 mm thick board. Bailey Metal Products Limited D-100-90 Corner Bead or approved equal.
 - .2 "J" mould for perimeter of gypsum board at openings, where gypsum board abutts dissimilar material and for forming control joints in gypsum board: galvanized steel sheet, minimum 0.59 mm overall thickness zinc coating Z275 ASTM A525M, minimum width of flanges 31.8 mm for 15.9 mm thick board. Bailey Metal Products Limited 4411 Channel Trim or approved equal.
 - .3 Casing bead: galvanized steel sheet, minimum 0.59 mm overall thickness zinc coating Z275, ASTM A525M, designed for finishing with joint compound.

- .2 Acoustic sealant: to CAN/CGSB-19.21-M87, Tremco Mfg. Co. 931-70X, or equal.
- .3 Polyethylene: to CAN/CGSB-51.34-M86.
- .4 Insulating strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required, Perma-Stik 1220X by Jacobs and Thompson Inc., or equal.
- .5 Joint compound, joint tape and taping compound: to CAN/CSA A82.31-M91, asbestos- free.

PART 3 - EXECUTION

3.1 Suspended and Furred Ceilings

- .1 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with CAN/CSA A82.31-M91 except where specified otherwise.
- .2 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .3 Install work level to tolerance of 1:1200.
- .4 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, and other openings.
- .5 Provide diagonal bracing at 1200mm OC (max), at corners of bulkheads and at changes in ceiling height, ensure framing is a rigid assembly.

3.2 Ceiling Bulkheads

- .1 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .2 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

3.4 Gypsum Board Application

- .1 Do not apply gypsum board until bucks, anchors, blocking, insulation, vapour barrier, electrical and mechanical work are approved.
- .2 Apply single layer gypsum board to metal framing using screw fasteners. Maximum spacing of screws 300 mm o.c.
- .3 Apply double layer gypsum board to metal framing where indicated on drawings using screw fasteners for first layer. Maximum spacing of screws 300 mm oc. Apply second (face) layer using laminating adhesive supplemented with screw fasteners.
- .4 Apply single layer gypsum board to masonry and concrete surfaces, where indicated, using laminating adhesive.

3.5 Accessories

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners

accurately, free from rough edges. Secure at 150 mm oc.

- .2 Install "J" mould casing beads around perimeter of suspended gypsum board ceilings.
- .3 Install "J" mould casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. "J" mould installation to form a 10mm wide joint, caulk joints with sealant.
- .4 Install "J" mould casing beads continuously at edges of gypsum board abutting window and door frames which do not wrap over the gypsum board, gypsum board abutting dissimilar material, to form 10mm wide joint. 10mm wide joint to be of consistent width and parallel to edge of item being framed, Caulk joint

3.6 Access Doors

- .1 Install access doors to electrical and mechanical fixtures specified in respective Sections.
- .2 Rigidly secure frames to furring or framing systems.

3.7 Taping and Filling

- .1 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .2 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .5 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

End of Section

1.1 Related Sections

- .1 Section 09 21 16 Gypsum Board
- .2 Section 09 51 00 Acoustic Ceilings

1.2 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

PART 2 - PRODUCTS

2.1 Materials

- .1 Non-loadbearing channel stud framing: to ASTM C645-83, 152 mm, 140 mm, 102 mm, 92 mm, 65 mm or 41 mm stud size as indicated, roll formed from 0.61 mm (24 gauge) thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 460 mm centres. Limited to non-structural locations, interior assemblies only.
- .2 Floor and ceiling tracks: to ASTM C645-83, in widths to suit stud sizes, 32 mm flange height.
- .3 Stiffener Channels: 38mm or 64mm width, 1.3mm thick hot-dip galvanized sheet steel, cold rolled channels.
- .4 Furring Systems: Metal furring runners, hangers, tie wires, inserts, anchors: to ASTM C645.
- .5 Drywall Furring Channels: 0.53mm core thickness hot-dip galvanized, steel channels for screw attachment of gypsum board.
- .6 Flat Ceiling Suspension System:
 - .1 Suspension System: tested in accordance with ASTM C635, roll formed from hot-dip galvanized, sheet steel; USG Drywall Suspension System by CGC Inc., or an approved alternative, and as follows:
 - .1 Main Tees: 38mm x 38mm, single web construction.
 - .2 Wall-to-Wall Main Tees: 38mm x 38mm, single web construction.
 - .3 Cross Tees: 38mm x 38mm, single web construction.
 - .4 Cross Channels: 73x22mm, with 37mm face width.

- .5 Wall Channels: 40x25mm, "C" channel.
- .6 Wall Molds: 38 x 25mm "L" profile.
- .2 Splice and Transition clips: purpose-made, roll formed from hot-dip galvanized steel sheet by USG, or an approved alternative.
- .3 Suspension wire: 2.75mm galvanized wire.
- .7 Metal channel stiffener: size to suit stud hole, 1.5 mm thick cold rolled steel, coated with rust inhibitive coating.
- .8 Acoustical sealant: to CAN/CGSB-19.21-M87, Tremco Mfg. Co. 931-70X, or equal.
- .9 Insulating strip: rubberized, moisture resistant 3 mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required.
- .10 Dampproof course: 0.15 mm thick polyethylene film.

PART 3 - EXECUTION

3.1 Erection

- .1 Align partition tracks at floor and ceiling and secure at 600 mm o.c. maximum.
- .2 Provide deflection track assembly at head of framing below structural elements (beams, roof decks, etc) subject to deflection. Installation to ensure structural loads will not be transferred to non-load bearing framing. Use 50 mm leg ceiling tracks. Do not secure studs to top deflection track.
- .3 Install dampproof course under stud shoe tracks of partitions on slabs on grade.
- .4 Place studs vertically at 400 mm oc, unless indicated otherwise on drawings, and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .5 Erect metal studding to tolerance of 1:1000.
- .6 Attach studs to bottom track using screws.
- .7 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .8 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.
- .9 Install metal door, window and screens frames where they occur in gypsum board partitions. Anchor frames securely to studs using minimum of 3 anchors per jamb for jambs up to 2200 mm high and minimum of 4 anchors per jamb for jambs over 2200 mm high.
- .10 Provide two studs extending from floor to ceiling or structure, as applicable, at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .11 Erect all framing to underside of structural support elements.

- .1 Interior walls to extend above acoustic ceilings, full height to the underside of the roof deck.
- .2 Where OWSJ run parallel to steel stud walls and interfere with the wall extending to the underside of the roof deck, frame wall around both sides of the OWSJ.
- .12 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .13 Frame openings and around built-in equipment, cabinets, access panels, on four sides.
- .14 Provide/co-ordinate framing suitable for wood blocking supports, installed by Section 06100, where required for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails.
- .15 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .16 Extend partitions to underside of steel deck or concrete slab, as applicable, except where noted otherwise on drawings.
- .17 Brace and reinforce studs as necessary to provide sturdy, rigid partitions to heights and lengths required.
- .18 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .19 Install two continuous beads of acoustical sealant under floor tracks. One bead between 10mm to 20mm down each side of the floor track.
- .20 Provide Blueskin SA or similar transition membranes where detailed prior to bottom or top track installation.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Division 01 – General Requirements

1.2 Reference Standards

- .1 Do tile work in accordance with Installation Manual 200, produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.
- .2 American National Standards Institute (ANSI)
 - .1 ANSI A118.1-1992, Specifications for Dry-Set Portland Cement Mortar.
 - .2 ANSI A118.3-1992, Specifications for Chemical Resistant Water Cleanable Tile-Setting and Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive.
 - .3 ANSI A118.5-1992, Specifications for Chemical Resistant Furan Resin Mortars and Grouts for Tile Installation.
 - .4 ANSI A118.6-1992, Specifications for Ceramic Tile Grouts.
- .3 American Society for Testing and Materials (ASTM)
 - .1 ASTM C 136- 96a , Method for Sieve Analysis of Fine and Coarse Aggregates.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-25.20- 95 , Surface Sealer for Floors.
 - .2 CGSB 71-GP-22M- 86 , Adhesive, Organic, for Installation of Ceramic Wall Tile.
 - .3 CGSB 71-GP-29M- 79 , Adhesive, Elastomeric, for Installation of Quarry Tiles.
 - .4 CGSB 71-GP-30M- 79 , Adhesive, Epoxy and Modified Mortar Systems, for Installation of Quarry Tiles.
 - .5 CAN/CGSB-75.1- M88 , Tile, Ceramic.
- .5 Canadian Standards Association (CSA)
 - .1 CAN/CSA-A5/A8/A362- 93 , Portland Cement/Masonry Cement/Blended Hydraulic Cement.

1.3 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.4 Quality Assurance

- .1 Perform tile installation specified in this Section only by a Subcontractor who has adequate plant, equipment and skilled tradesmen to perform it expeditiously and is proven to have been responsible for satisfactory installations similar to that specified during a period of at least the

immediate past five years.

- .2 All products for use in this Section shall be from the same product run to ensure consistent colour match.

1.5 Samples

- .1 Submit samples in accordance with Section 01 34 00.
- .2 Submit one 600 mm x 600 mm sample panel of each colour, texture, size, and pattern of tile.
- .3 Submit 38mm long sample bars of cured grout, submit manufacturers full colour range.
- .4 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation.

1.6 Environmental Conditions

- .1 Maintain air temperature and structural base temperature at quarry tile installation area above 12°C for 48 h before, during, and 7 days after installation.

1.7 Maintenance Materials

- .1 Supply 2% of quantity of each type and colour of tile installed for maintenance purposes. Deliver sealed labelled packages to the Site as directed by Consultant. Maintenance materials to be from same product run as tile used for the project.

PART 2 - PRODUCTS _

2.1 Porcelain Floor Tile

- .1 **CT-1:** Washroom porcelain floor tile to be Olympia Tile Regal Series 300 x 600. Floor base to be REL top edge finished (100mm high), colour to match floor tile as supplied by Olympia Tile. Include for 100mm base tile at all walls with REL top edge, except at aluminum framed curtain wall locations.

2.2 Mortar and Adhesive Materials

- .1 Thin Set Floor Mortar: latex-modified Portland cement thin-set mortar, to ANSI 118.4.
Acceptable products are:
 - .1 Kerabond/Keralastic by Mapei Inc.
 - .2 Laticrete 4237/211, by Laticrete International Inc.
 - .3 Full Flex, by Tec Specialty Products Inc.
 - .4 Premium-Blend/Acrylic Mortar Admix, by Custom Building Products.

2.3 Grout

- .1 Epoxy floor grout: two-component, 100% solids epoxy grout, to ANSI 118.6.
Colours as selected by Consultant. Acceptable products are:
 - .1 Kerapoxy®, by Mapei Inc.
 - .2 SpectraLOCK PRO, by Laticrete International Inc.
 - .3 AccuColor EFX, by Tec Specialty Products Inc.
 - .4 CEG 2000, by Custom Building Products

2.4 Accessories

- .1 Edge trims: "Schlüter-Trims" anodized aluminum metal edge trims for walls and floors, height to match tile and adjacent surface, as manufactured by Schlüter Systems; or, approved alternate.

.1 Floor edge trim at doorways, Schlüter – Trim: Reno-Ramp, 65mm width x length to equal door opening; for transition of tile height to adjacent flooring.

.2 Sealant: in accordance with Section 07 90 00, colour as selected by Consultant.

2.5 Floor Patch

.1 Mapei Planipatch: ultra fast-drying, self-curing, polymer-modified, cement-based patching compound.

PART 3 - EXECUTION

3.1 Examination

- .1 Ensure that environmental conditions and backing surfaces have been provided to specified requirements.
- .2 Concrete surfaces shall be at least 28 days old, completely cured and free of excessive moisture.
- .3 Defective tile work resulting from application to unsatisfactory surfaces will be considered the responsibility of this Section.

3.2 Protection

- .1 Prohibit traffic in work areas during installation and for 72 hours after installation of tile.

3.3 Workmanship

- .1 Apply tile to clean and sound surfaces.
- .2 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Drill tile for hardware and pipes, fit tile closely so that escutcheons cover cuts. Maintain uniform joint appearance. Cut edges smooth and even. Tile to cover entire wall or floor before installation of items of other trades, such as sinks, mirrors, urinals, hand dryers, etc.
- .3 Mix and apply skim coat in accordance with manufacturer's instructions to substrate using flat-edge steel trowel, finishing surface to required smoothness. Provide skim coat to 12mm maximum depth over entire floor area to be tiled to remove irregular substrate surfaces. Maximum surface tolerance 1:800.
- .4 Make joints between tile uniform and approximately 4 mm wide, plumb, straight, true, even and flush with adjacent tile. Align patterns.
- .5 Lay out tiles so perimeter tiles are minimum 1/2 size.
- .6 Extend tile behind all surface mounted items, no area to be left untiled.
- .7 Sound tiles after setting and replace hollow-sounding units to obtain full bond.
- .8 Make internal corners square. Use rounded edge tile at external corners.
- .9 Install divider strips at junction of tile flooring and dissimilar flooring materials. Ensure that top of floor tile is flush to top of adjacent floor finish or use "reducer" type divider strip.
- .10 Allow minimum 24 hours after installation of tiles before grouting.

- .11 Grout tile joints in accordance with grout manufacturer's directions.
- .12 Fill joints solid and flush with face of square edge tile, and to the depth of cushion on cushion-edge tile.
- .13 Ensure that finish grout is uniform in colour, smooth and without voids, pinholes or low spots.
- .14 Before project completion remove and replace defective, damaged, loose and unbonded tile. Point defective joints.
- .15 Clean installed tile surfaces after installation and grout has cured, in accordance with tile manufacturer's directions.

3.4 Floor Tile Application

- .1 Install floor tile in locations as indicated on Room Finish Schedule and Drawings.
- .2 Install floor tile in staggered brick pattern as indicated on Drawings or otherwise provided by Consultant.
- .3 Install 4" high tile base in locations as indicated on Room Finish Schedule, Drawings and to suit site conditions.
- .4 Install floor tile and base in compliance with appropriate T.T.M.A.C. recommended details for thin-set methods on applicable substrates, based on specified materials and construction, and in accordance with tile and adhesive manufacturer's recommendations.
- .5 Ensure concrete surfaces are straight and level within tolerance of 1/8" +/- in 12'-0".
- .6 Spread thin-set mortar using an approved notched trowel, in accordance with manufacturer's directions. Do not spread more material that can be covered before skinning or initial set takes place.
- .7 Imbed tiles firmly in place. Make grout joints in tile uniform.
- .8 Level and bed tiles by tapping with a rubber mallet or similar tool.
- .9 Do not wet tiles or backing surface before installation.
- .10 Allow minimum 24 hours after installation of floor tiles, before grouting.
- .11 Grout joints flush with surface of tiles using a pointing tool or small trowel. Force grout into joints to eliminate voids and to obtain maximum compaction.
- .12 Install metal edge trims at all exposed tile edges and at junction of tile flooring and dissimilar materials.
- .13 Apply small bead of silicone sealant at juncture between floor tile and base of all floor mounted fitments.

3.5 Base Tile - General

- .1 Install on concrete block in accordance with TTMAC Detail No. 200-11 or 200-11A using thin set bond coat and thin set system grout, thin set method.

3.6 Grouting

- .1 Mix grout materials and latex additive in accordance with manufacturer's written instructions.
- .2 Apply grout in accordance with manufacturer's written instructions with a straight edge steel trowel, force material to completely fill joints.
- .3 Immediately remove excess material with purpose made stiff rubber trowel.
- .4 Completely clean surface of tile with damp sponge to remove all traces of grout on face of tile. Leave grout joint with a smooth consistent texture.

3.7 Sealant

- .1 Apply sealant in accordance with manufacturer's instructions and in accordance with Section 07 90 00 at control joints, at junction between floor tile and base tile, wall tile or other hard vertical surface and at all internal corners of base tile work. Ensure joint is clean of mortar, grout and other foreign material prior to application of sealant.

3.8 Cleaning

- .1 Clean installed tile surfaces with cleaner after installation and grouting cured, in strict accordance with manufacturer's recommendations.
- .2 Clean to Owner's satisfaction.

3.9 Protection Of Finished Work

- .1 Do not permit traffic over finished floor surface until tile mortar is fully set.

3.10 Sealers and Protective Coatings

- .1 Upon completion of installation, after tiles surfaces are clean and dry, apply sealer and protective coatings as required, in accordance with manufacturer's instructions and T.T.M.A.C. recommendations.
- .2 Keep surfaces free from traffic and staining materials for 72 hours after application of sealer and coatings.
- .3 Sealers and Protective Coatings:
 - .1 Tile and grout to be sealed with Aqua Mix Sealer's Choice 15 Gold.
 - .2 Polished finished tiles shall have Aqua Mix Sealer's Choice 15 Gold applied before grouting.

End of Section

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 09 21 16 Gypsum Board
- .2 Division 15
- .3 Division 16

1.2 References

- .1 ASTM C 635-95 Specifications for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
- .2 ASTM C 636-92 Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

1.3 Design Criteria

- .1 Maximum deflection: 1/360th of span to ASTM C 635-95 deflection test.

1.4 Samples

- .1 Submit samples in accordance with Section 01340.
- .2 Submit samples of ceiling suspension system and acoustical panels.

1.5 Environmental Conditions

- .1 Permit wet work to dry before commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20 - 40% before and during installation.
- .3 Store materials in work area 48 hours prior to installation.

1.6 Maintenance Materials

- .1 Provide maintenance materials in accordance with Section 01 73 00.
- .2 Store where directed, in suitable boxes, properly identified.
- .3 Materials to be same production run as installed materials.

PART 2 - PRODUCTS

2.1 Materials

- .1 Mineral Fibre Panels:
 - .1 Acoustic Tile Design:
 - .1 Material: CGC Radar Illusion Two/24 Panels 2842 , SLT tegular edge
 - .2 Surface finish: factory applied vinyl latex paint.
 - .3 Surface pattern: non-directional fissured.

- .4 Colour: White
- .5 Size: 610 mm x 1220 mm x 19 mm thick
- .6 Edge style: tegular edge
- .7 Flame spread rating: 25 or under.
- .8 Smoke developed: 50 or under.
- .9 Fuel Contributed: 25 or under.
- .10 Noise reduction co-efficient 0.50 - 0.60 or better.
- .11 Light reflectance: over 75.

PART 3 - EXECUTION

3.1 Installation

- .1 Install acoustic ceilings in accordance with ASTM C 636-92, in accordance with manufacturer's instructions and as specified herein.
- .2 Refer to Room Finish Schedule on drawings for locations of ceiling tile to be replaced and ceiling grid to remain.

End of Section

PART 1 - GENERAL

1.1 General Requirements

- .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- .2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.
- .3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.
- .4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Environmental Requirements

- .1 Do not apply paint finish in areas where dust is being generated.
- .2 Paint and finish only in clean, properly ventilated areas with temperatures not lower than 10 degrees C for paint and for varnish.
- .3 Do work only when surfaces and conditions are satisfactory for production of first class job.

1.3 Delivery, Storage, Handling

- .1 Deliver materials in original containers with labels intact and store in locked ventilated area where directed. Keep stored materials covered at all times and take necessary precautions against fire. Minimum temperature of storage room, 10 degrees C.
- .2 Provide CO² fire extinguisher of minimum 9 kg capacity in storage area while materials are stored within.
- .3 Leave storage areas clean and free from evidence of occupancy on completion.

1.4 Maintenance Materials

- .1 Deliver to site on completion of painting as directed by Consultant, sealed containers of each finish painting material applied and in each colour. Label each container as for original, including mixing formula. Provide 1 L when less than 50 L are used, 4 L when 50-200 L are used and 8 L when over 200 L are used.

PART 2 - PRODUCTS

2.1 Materials

- .1 Qualified products: only paint materials listed on the CGSB Qualified Products List are acceptable for use on this project.
- .2 Paint materials for each coating formulae to be products of a single manufacturer.
- .3 Painting and finishing materials shall be products of one of the following manufacturers and shall be manufacturer's best quality products.

- .1 Benjamin Moore Co. Ltd.
- .2 ICI Paints.
- .3 Pittsburgh Paints

- .4 Provide the following paint systems for the various substrates, as indicated. Provide only the listed prime and finish coat materials unless otherwise recommended in writing by the paint manufacturer for each specific substrate.

- .5 Where specific finish paint material is not indicated, refer to notes and finish schedules for finish paint material and gloss levels for each surface to be painted.

2.2 Exterior Paint Schedule

- .1 Ferrous Metal; two (2) finish coats of water borne semigloss or gloss acrylic enamel over primer:
Rust Inhibiting Primer:
PPG: Pitt-Tech 100 percent Acrylic Primer 90-712
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss Rust Inhibitive
ICI: Devoe Devflex 4020 PF Direct to Metal Primer and Flat Finish
Finish Coat:
PPG: Pitt-Tech 100 percent Acrylic Satin Direct to Metal 90-474
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss Rust Inhibitive
ICI: Devflex 4206 Int/Ext Acrylic Latex Semi-gloss Enamel

- .2 Galvanized Metal; two (2) finish coats of water borne semigloss acrylic enamel over primer:

Galvanized Metal Primer:
PPG: Pitt-Tech 100 percent Acrylic Primer 90-712
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss
ICI: Devoe Devflex 4020 PF Direct to Metal Primer and Flat Finish.
Finish Coat:
PPG: Pitt-Tech 100 percent Acrylic Satin Direct to Metal 90-474
Benjamin Moore: Moorlife 105 Flat Acrylic House Paint
ICI: Devoe Devflex 4206 Int/Ext Acrylic Latex Semi-gloss Enamel

2.3 Interior Painting Schedule

- .1 Concrete and Concrete Block; two (2) finish coats over block-filler:

Block Filler for CMU:
PPG: Speedhide 6-7 Latex Block Filler
Benjamin Moore: M88 Latex Block Filler
ICI: 4000-1000 Blox Fil Acrylic Block Filler
Finish Coat:
PPG: Pure Performance Interior Latex
Benjamin Moore: Eco Spec Interior Latex
ICI: Devoe Devflex 4206 Interior Latex Semi-gloss

- .2 Concrete and Concrete Block; For Epoxy Coating locations (Refer to Room Finish Schedule):

Heavy duty block filler for CMU industrial grade:
PPG: 16-90 Pitt-Glaze Acrylic Block Filler
Benjamin Moore: High Build 100 percent Acrylic Masonry Primer 068
ICI: 4000-1000 Blox Fil Acrylic Block Filler
Finish Coat Industrial Grade:
PPG: 16-551 Pitt-Glaze WB Waterborne Acrylic Epoxy
Benjamin Moore: M45/M46 Epoxy mastic coating
ICI: Devoe Devflex 4206 interior latex semi-gloss

- .3 Gypsum Drywall; two (2) finish coats over primer.

Primer:

PPG: Pure Performance Interior Latex Primer 9-2
Benjamin Moore: Eco Spec interior latex primer
ICI: LM 9116 Lifemaster 2000 interior primer-sealer

Finish Coat:

PPG: Pure Performance Interior Latex
Benjamin Moore: Eco Spec Interior Latex
ICI: LM 9300 Lifemaster 2000 Interior Eggshell

- .4 Ferrous Metal; two (2) finish coats of water borne semi-gloss acrylic latex enamel over primer:

Waterborne Acrylic Primer:

PPG: Pitt-Tech 100 percent Acrylic Primer 90-712
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss
ICI: Devoe Devflex 4020 PF Direct to Metal Primer and Flat Finish

Finish Coat:

PPG: Pitt-Tech 100 percent Acrylic Satin Direct to Metal 90-474
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss
ICI: Devoe Devflex 4206 Int/Ext Acrylic Latex Semi-gloss Enamel

- .5 Galvanized Metal; two (2) finish coats of water borne semi-gloss acrylic latex enamel over primer:

Waterborne Acrylic Galvanized Metal Primer:

PPG: Pitt-Tech 100 percent Acrylic Primer 90-712
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss
ICI: Devoe Devflex 4020 PF Direct to Metal Primer and Flat Finish

Finish Coat:

PPG: Pitt-Tech 100 percent Acrylic Satin Direct to Metal 90-474
Benjamin Moore: M29 Direct to Metal Acrylic Semi-gloss
ICI: Devoe Devflex 4206 Int/Ext Acrylic Latex Semi-gloss Enamel

- .6 Wood (paint); two (2) finish coats over prime coat.

Primer:

PPG: Pure Performance Interior Latex Primer
Benjamin Moore: Eco Spec Interior Latex Primer
ICI: Latex Undercoater 1020

Finish Coat:

PPG: Pure Performance Interior Latex
Benjamin Moore: Eco Spec Interior Latex
ICI: LM 9300 Lifemaster 2000 Interior Eggshell

- .7 Interior Wood (Urethane); two (2) finish coats over sealer coat.

Primer:

PPG: Polyurethane thinned to fill grain
Benjamin Moore: Moore Wood Grain Filler 238
ICI: Polyurethane thinned to fill grain

Finish Coat:

PPG: REZ Interior Polyurethane - Satin
Benjamin Moore: Interior Wood Polyurethane Finish 435 - Satin
ICI: Woodpride Polyurethane – Satin 1902

PART 3 – EXECUTION

3.1 Preparation

- .1 Prepare wood surfaces to CGSB 85-GP-1M.
 - .1 Use CAN\CGSB-1.126 vinyl sealer over knots resinous areas.
 - .2 Apply wood paste filler to nail holes and cracks.
 - .3 Tint filler to match stains for stained woodwork.
- .2 Touch up shop paint primer on steel with CAN/CGSB-1.40-M89 to CGSB 85-GP-14M.
- .3 Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16M.
- .4 Prepare masonry, and concrete surfaces to CGSB 85-GP-31M.
- .5 Prepare concrete floors to CGSB 85-GP-32M.
- .6 Prepare gypsum board surfaces to CGSB 85-GP-33M. Fill minor cracks with patching compound.
- .7 Vacuum insulation covering surfaces.
- .8 Prepare copper piping and accessories to CGSB 85-GP-20M.
- .9 Clean existing interior surfaces to be repainted or varnished to provide bond. Flatten gloss paint and varnish with sandpaper. Leave entire surface suitable to receive designated finishes and in accordance with finish manufacturer's instructions.
- .10 Provide drop cloths or adequate plastic sheets to protect floors in areas assigned for storage and mixing of paints.
- .11 Use sufficient drop cloths and protective coverings for full protection of floors, furnishings and work not being painted. Protect mechanical, electrical and special equipment, hardware, all other components of building which do not require painting, from paint spotting and other soiling. Clean any components so paint spotted or soiled. Remove switch and outlet covers to protect them from paint splatter.
- .12 Accessories: Remove finish hardware, receptacle and switch plates and other accessories, mask items not removable. Replace when paint is dry and clean them. Do not clean hardware with solvent that will remove permanent lacquer finish.

3.2 Application

- .1 Sand and dust between each coat to remove defects visible from distance up to 1.5 m.
- .2 Finish as specified elsewhere and as follows; when finish is required, finish tops, bottoms, sides or any other surface which is exposed. This includes areas visible by looking in, up or behind items.
- .3 Finish bottoms, edges, tops and cutouts of metal doors after fitting as specified for door surfaces.
- .4 Provide scaffolding, staging, platforms and ladders, as required for execution of the Work. Place to avoid interference with work of other trades. Comply with Occupational Health and Safety Act.
- .5 Finishes and number of coats specified hereinafter are intended as guide only. Some materials and colours require additional coats to ensure adequate and uniform coverage. Apply further coats until complete satisfactory coverage is achieved. Consult with Consultant before proceeding with application of finishes to surfaces for which no formula is given in finish schedule.

- .6 Areas exhibiting incomplete or unsatisfactory coverage shall have entire plane repainted. Patching not acceptable. Paint entire plane of areas which have been cut and patched.
- .7 Apply materials in accordance with manufacturer's directions and specifications. Do not use adulterants.
- .8 Finish glazing rebates before glazing commences.
- .9 Finish paint exposed metal roof deck, steel joists, beams, lintels and other exposed steelwork occurring in areas without finished ceilings.
- .10 Finish paint metal brackets, metal hook strips and other miscellaneous metal work.

3.3 Mechanical Equipment

- .1 Paint radiator and convector covers as directed by Consultant.
- .2 Paint fire extinguisher and fire hose cabinets in colour to match adjacent surfaces.
- .3 Paint exposed conduits, pipes, ductwork, hangers and other mechanical and electrical equipment occurring in finished areas as well as inside cupboards and cabinet work. Colour and texture to match adjacent surfaces, except as noted otherwise.
- .4 Paint piping, conduits, ductwork and other unfinished equipment in mechanical rooms, electrical rooms, storage rooms and janitorial rooms. Gas piping colour as directed by local Gas company.
- .5 Keep sprinkler heads free of paint.
- .6 Paint inside of ductwork where visible with primer and one coat of matt black paint.
- .7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .8 Paint both sides and edges of plywood backboards and furring for equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.4 Disposal of Paint Waste

- .1 Be responsible for disposal of material and waste of this Section.
- .2 All empty containers shall be wiped or drained clean. Allow remaining film to dry before disposal. Recycle metal containers and dispose of container which are not recyclable. Ensure non-recyclable containers are acceptable to landfill authority.
- .3 Remove leftover paint and recycle for other uses. Paint that cannot be recycled and is hazardous shall be cared for and disposed of as Hazardous Waste. Generators of Hazardous Waste shall be registered and disposal shall be in accordance with regulations. Note that when handling coating materials, approved vapour/particulate respirator should be worn as protection from solvent vapours. Dust respirators do not provide protection from vapours.
- .4 Cleanup solvents shall be removed and recycled if possible. Consider non-recyclable thinners and paint sludge hazardous. Treat them as Hazardous Waste.
- .5 Painting work will not be considered complete until spatters, drips, smears and overspray have been removed to satisfaction of Consultant.

3.5 Field Quality Control

- .1 The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when paint is being applied.
- .2 The Owner will engage the services of an independent testing laboratory to sample the paint material being used. Samples of material delivered to the project will be taken, identified, sealed, and certified in the presence of the Contractor.
- .3 The testing laboratory will perform appropriate tests for the following characteristics as required by the Owner:
 - .1 Quantitative materials analysis
 - .2 Abrasion resistance
 - .3 Apparent reflectivity
 - .4 Flexibility
 - .5 Wash ability
 - .6 Absorption
 - .7 Accelerated weathering
 - .8 Dry opacity
 - .9 Accelerated yellowness
 - .10 Recoating
 - .11 Skinning
 - .12 Color retention
 - .13 Alkali and mildew resistance
- .4 If test results show material being used does not comply with specified requirements, the Contractor may be directed to stop painting, remove non-complying paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.
Cleaning

End of Section