



• JEFFERY ARCHITECT •

SIMCOE COUNTY DISTRICT SCHOOL
BOARD



Simcoe County
District School Board

1170 The King's Highway 26
Midhurst, Ontario L0L 1X0
Phone: (705)728-7570

HOLLY MEADOWS ES

**ROOFING, MECHANICAL &
INTERIOR FINISHES
UPGRADES**

SPECIFICATIONS

PROJECT NO. 12464T

ISSUED FOR TENDER / PERMIT APRIL 14, 2021

22 BLAKES
STREET,
BARRIE
L4M 1J6

Tel.705 739-1757

**SPECIFICATION
for**

**HOLLY MEADOWS ES
ROOFING, MECHANICAL & INTERIOR FINISHES UPGRADES
PROJECT NO. 12464T**

OWNER

SIMCOE COUNTY DISTRICT SCHOOL BOARD
1170 Hwy. 26
Midhurst, ON L9X 1N6
Attention: Chris Whelan

ISSUED FOR TENDER / PERMIT APRIL 14, 2021

**SIMCOE COUNTY DISTRICT SCHOOL BOARD
HOLLY MEADOWS ES - ROOFING, MECHANICAL & INTERIOR FINISHES UPGRADES**

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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 **Holly Meadows Elementary School, 151 Mapleton Avenue, Barrie, Ontario** (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 mandatory site meetings;
 - (i) for **Bidders (General Contractors)** at the **Place of the Work** on **16 April, 2021**, commencing at **9:00 a.m.**
 - (ii) for **Roofing Contractors** at the **Place of the Work** on **16 April, 2021**, commencing at **10:00 a.m.**
 - (iii) Please note, due to policies in place for COVID 19, the Owner is asking that only one (1) representative from each Bidder attend the mandatory meeting. Attendees are required to take the self-assessment available at: <https://covid-19.ontario.ca/self-assessment/> prior to arriving the day of the mandatory meeting and must wear a face covering while in the building.
 - (b) The Owner requires that all Bidders 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 1:30:00 p.m.** Local Time on **5 May, 2021** (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 a digital bond, no other form of bond is acceptable. Bids submitted without digital bond will be considered noncompliant.
 - (h) The successful Bidder is permitted to commence work on site as of 2 July, 2021.
 - (i) The successful Bidder will be required to achieve Substantial Performance of the Work by 27 August, 2021.
 - (j) The Bid Coordinator is Lori McColman, Assistant Manager of Accounting and Purchasing, at “lmccolman@scdsb.on.ca”.

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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	estimating@bertram.ca
BDA Inc.	(416) 251-1757	info@bda.ca
Deciantis Construction Limited	(905) 884-5131	john@deciantisconstruction.ca
Devlan Construction Ltd.	(519) 763-5800	andrew@devlan.com
Everstrong Construction Ltd.	(905) 878-7295	george@everstrongconstructionltd.com
Gateman-Millooy 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
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 Electrical Subcontractors are prequalified for the Work.

Abercrombie Electric Company Ltd.	(705) 728-5509	quote@abercrombieelectric.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	dbrown@beswickgroup.com
Horse Power Electrical Corp.	(705) 329-4998	mmacchia@hpemc2.com
J.M.R. Electric Ltd.	(519) 235-1516	jmr.electric@jmrelectric.ca
KB Electrical **1693377 Ontario Inc.	(705) 739-0819	keith.bartley@kbelectrical.ca
Marnoch Electrical Services Inc (MFM)	(416) 735-7424	jchornabaj@mfm-service.ca
Minnings Electric Service Ltd.	(705) 322-1307	minningselectric@gmail.com
N.S.E. 2000 INC.	(705) 325-3738	info@nse2000.com
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	glen@walkers.on.ca
Wallwin Electric Services Ltd.	(705) 726-1859	john.holloway@wallwinelectric.com
Western Electrical Limited	(705) 737-4135	bbalaban@westernmechanical.net

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1.3.3 The following Mechanical Subcontractors are prequalified for the Work.

Anvi Services Ltd.	(905) 997-3895	office@anviservices.com
CEC Mechanical Ltd.	(905) 713-3711	dbrown@beskickgroup.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) 735-7424	jchornabaj@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@stellarmechanical.ca
Western Mechanical Limited	(705) 737-4135	bbalaban@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
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@sprouleroof.ca
Trio Roofing Systems Inc.	(905) 456-1688	paulo@trioroofing.ca
Viana Roofing & Sheet Metal Limited	(416) 763-2664	info@vianarroofing.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.

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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:
- (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(i).
- 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 Reserved.
- 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.

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- 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).
- 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.

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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 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.

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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. All questions must be submitted through the Portal.

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) for Pre-Qualified Roofing 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 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;

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- (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;
 - (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.

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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 "OHSA 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 OHSA 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 OHSA 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 OHSA 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.

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- (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 that 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**”).

9.3.2 Bid Security.

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.

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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 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 Reserved.

9.4.3 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 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

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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 that 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 from 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 evaluated.

- 10.4.2 Reserved

- 10.4.3 It is the intent of the Simcoe County District School Board that a compliant bid submitted by a Bidder with the lowest base bid price be awarded the contract.

- 10.4.4 If there is a tie in the evaluation 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 (in person or virtually) 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, **Including COVID-19 policy**; 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.

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.

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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;
- (d) Reserved.

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;

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(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;
 - (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.

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- 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.
- 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

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- (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 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

**SIMCOE COUNTY DISTRICT SCHOOL BOARD
HOLLY MEADOWS ES - ROOFING, MECHANICAL & INTERIOR FINISHES UPGRADES**

PROJECT NO. 12464T

LIST OF CONSULTANTS

Section 00200
April 14, 2021
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PART 1: GENERAL

1.1 THE CONSULTANT (ARCHITECT)

- .1 Jeffery Architect
22 Blake Street,
Barrie, Ontario
L4M 1J6
Telephone: (705) 739-1757

1.2 STRUCTURAL ENGINEERING SUBCONSULTANT

- .1 Tacoma Engineers Limited
570 Bryne Drive
Barrie, Ontario
L4N 9P6
Telephone: (705) 735-1875

1.3 MECHANICAL & ELECTRICAL ENGINEERING SUBCONSULTANT

- .1 H.H. Angus & Associates Limited Consulting Engineers
1127 Leslie Street,
Toronto, Ontario
M3C 2J6
Telephone: (416) 443-8200

1.4 ROOFING SUBCONSULTANT

- .1 EXP Services Inc.
1595 Clark Boulevard
Brampton, Ontario L6T 4V1
Telephone: (905) 793-9800
Facsimile: (905) 793-0641

END OF LIST OF CONSULTANTS

SUPPLEMENTARY CONDITIONS
AMENDMENTS TO CCDC 2 – 2008
STIPULATED PRICE CONTRACT
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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 5.3.1 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
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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. Act

Act means the Construction Act (Ontario), as amended.

28. 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 the course of the Work 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 paper copy and PDF formats.

29. 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.

30. 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.

31. Install

Install means install and connect. Install has this meaning whether or not the first letter is capitalized.

32. 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.

33. OHSA

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

34. Proper Invoice

Proper Invoice means an application for payment delivered by the Contractor to the Owner that fully complies with the requirements of GC 5.1A – PROPER INVOICE FOR PROGRESS PAYMENT and GC 5.6A – PROPER INVOICE FOR FINAL PAYMENT, as the case may be.

35. WSIB

WSIB means the Ontario Workplace Safety & Insurance Board.”

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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 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 as follows:

“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 as follows:

- (a) amend paragraph 1.1.7.1 by changing the order of the first four bullet points so that, as reordered, the bullet points read as follows:

“1.1.7.1 the order of priority of documents, from highest to lowest, shall be

- Supplementary Conditions,
- the Agreement between the Owner and the Contractor,
- the Definitions,
- the General Conditions”

- (b) add to the end of paragraph 1.1.7 the following:

“Notwithstanding the foregoing, if there is a conflict or discrepancy between Drawings or between Drawings and Specifications 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

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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 partial 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:

“If, in the opinion of the Contractor, a Supplemental Instruction involves an adjustment to 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 to 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.”

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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 or deficiencies identified as priorities by the Owner or the Consultant.”

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 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.

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- 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 forthwith 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."

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

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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 provided 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 two (2) week look-ahead schedule indicating the major activities to be undertaken or constructed in such two (2) week period.”

- 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, or if the Contractor has so advised the Consultant pursuant to paragraph 3.5.1.3, the Contractor shall take appropriate steps, at the Contractor's own expense, 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, for review and approval, a recovery plan demonstrating how the Contractor will achieve the recovery of the Construction Schedule.
- 3.5.3 If after applying the expertise and resources required under paragraphs 3.5.1.2 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

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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.”

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.”

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 as follows:

- (a) by deleting the words “before signing the Contract” in the third line of that paragraph; and
- (b) 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 shall accept the assignment of any contract procured by the Owner for Work or Products required on the Project that has been pre-tendered or pre-negotiated by or on behalf of 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

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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 3.8.8 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. Immediately upon receipt of the Owner’s order, the Contractor shall make arrangements to appoint a replacement representative or employee acceptable to the Owner.
- 3.8.8 Where the Work is being performed at or near an existing school during the school year, the Contractor shall, upon the Owner’s request, provide to the Owner clear criminal background checks for 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 clear criminal background checks for any of their employees who will be providing work or services at the Place of the Work. The Owner shall have the unfettered and absolute right and discretion to order the Contractor to remove from the Project and replace, without cost to the Owner, any individual who is unable to comply with this paragraph.”

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.”

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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 acknowledgement or acceptance of the Work or the Project, nor shall it entitle the Contractor to an adjustment in the Contract Time or Contract Price, nor shall it relieve the Contractor of any of its obligations under the Contract, including the Contractor's designation and obligations as “constructor” under OHSA, and the Contractor's obligations respecting

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construction health and safety 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.”

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

3.19.1 Add a new GC 3.15 as follows:

"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.

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SC3.22 GC 5.1A PROPER INVOICE FOR PROGRESS PAYMENT

3.22.1 Add a new GC 5.1A as follows:

"GC 5.1A PROPER INVOICE FOR PROGRESS PAYMENT

5.1A.1 In this Contract a Proper Invoice for progress payment shall mean an application for payment made by the Contractor that:

- .1 is delivered to the Owner via email to both fservices@scdsb.on.ca and the specified Project Coordinator as well as to the Prime Consultant. If an invoice is received after 4:00 PM it is deemed to have been received on the next business day; and it is noted that any invoice received prior to the last day of the month for which the invoice is for it is not deemed to have been received until the last day of the month.
- .2 includes all of the following:
 - .1 the Contractor's name and address and HST registration number;
 - .2 the date of the application for payment and the period during which the services or materials were supplied;
 - .3 information identifying the authority, whether in the Contract or otherwise, under which the services or materials were supplied;
 - .4 a description, including quantities where appropriate, of the services and materials that were supplied;
 - .5 the amount payable for the services or materials that were supplied, and the payment terms;
 - .6 the name, title, telephone number and mailing address of the person to whom payment is to be sent;
 - .7 where the invoice amount includes amounts charged on the basis of hourly rates, documentation in support of the amount claimed, including dates that services were performed, identity of the person(s) involved, the hours spent, and a description of the services performed;
 - .8 copies of any Change Orders for which the Contractor is claiming payment, together with all backup documents;
 - .9 a statement based on the schedule of values for the Work;
 - .10 a current valid clearance certificate issued by the WSIB;
 - .11 certificates of insurance confirming the placement of the insurance coverage required by this Contract;
 - .12 for the second and all subsequent applications for payment, a CCDC 9A Statutory Declaration stating that all accounts for services and materials and other indebtedness incurred by the Contractor for which the Owner may in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified matter in dispute;
 - .13 in respect of any subcontract whose value exceeds \$100,000, a statutory declaration in form CCDC 9B – 2001;
 - .14 an updated Construction Schedule in accordance with paragraph 3.5.1.3 of GC 3.5 – CONSTRUCTION SCHEDULE."

SC3.23 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

3.23.1 Delete paragraph 5.2.1 and replace it with the following:

"5.2.1 Proper Invoices for progress payment may be made monthly as the Work progresses."

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3.23.2 Delete paragraph 5.2.2.

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

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

3.23.4 Delete paragraph 5.2.4 and replace it with the following:

“5.2.4 The Contractor shall, within 10 Working Days after Contract signing submit to the Consultant, for the Consultant’s approval, a schedule of values for the parts of the Work aggregating the total amount of the Contract Price, so as to facilitate evaluation of applications for payment. Such schedule of values:

- .1 shall include a detailed breakdown of the Work; and
- .2 shall include a line item which assigns an appropriate portion of the Contract Price for quality control and closeout of the Work.”

3.23.5 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 13.2 – OWNERSHIP OF MATERIALS.”

SC3.24 GC 5.3 PROGRESS PAYMENT

3.24.1 Delete paragraph 5.3.1 and replace it with the following:

“5.3.1 The Consultant will issue to the Owner and copy to the Contractor, no later than 10 calendar days after the date the Owner receives a Proper Invoice for progress payment, a certificate for payment in the amount applied for, or in such other amount as the Consultant determines to be properly due.

5.3.2 Subject to the Owner’s right to give notice of non-payment in accordance with the Act, and subject to the holdback provisions of the Act, the Owner will pay the amount payable under a Proper Invoice for progress payment no later than 28 days after the date the Owner receives the Proper Invoice. Provided that the Owner’s obligation to make payment shall not arise unless and until the Contractor’s application for payment constitutes a complete Proper Invoice as provided in GC 5.1A – PROPER INVOICE FOR PROGRESS PAYMENT. For certainty, and without limitation, the Owner may refuse to pay all or any portion of an application for progress payment where:

- .1 the application does not comply with all of the requirements of a Proper Invoice in GC 5.1A – PROPER INVOICE FOR PROGRESS PAYMENT; and/or
- .2 the amount applied for exceeds the amount stated in the certificate for payment issued by the Consultant pursuant to paragraph 5.3.1.

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.”

SC3.25 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

3.25.1 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.

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- 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 (excluding the As-Built Drawings), 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.
- 5.4.5 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 documents and materials are delivered.
- 5.4.6 Within 25 days after 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.
- 5.4.7 Should any documents or materials not be delivered in accordance with paragraph 5.4.4 or 5.4.6 by the earlier of: (1) 60 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 retained by 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."

SC3.26 GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- 3.26.1 Delete paragraphs 5.5.3, 5.5.4 and 5.5.5 and replace them with the following:

"5.5.3 Subject to the Owner's right to give notice of non-payment of holdback in accordance with the Act, the Owner will pay the amount authorized by the certificate for payment of the holdback amount in accordance with the provisions of the Act. For certainty, and without limitation, the Owner may refuse to pay a portion of the holdback where the Owner is entitled to deduct and retain amounts in accordance with paragraphs 5.4.5, 5.4.6 and/or 5.4.7."

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SC3.27 GC 5.6A PROPER INVOICE FOR FINAL PAYMENT

3.27.1 Add a new GC 5.6A as follows:

"GC 5.6A PROPER INVOICE FOR FINAL PAYMENT

5.6A.1 In this Contract a Proper Invoice for final payment shall mean an application for final payment made by the Contractor that:

- .1 is delivered to the Owner via email to both fservices@scdsb.on.ca and the specified Project Coordinator as well as the Prime Consultant. If an invoice is received after 4:00 PM it is deemed to have been received on the next business day and it is noted that any invoice received prior to the last day of the month for which the invoice is for it is not deemed to have been received until the last day of the month.
- .2 includes all of the following:
 - .1 the Contractor's name and address and HST registration number;
 - .2 the date of the application for payment and the period during which the services or materials were supplied;
 - .3 information identifying the authority, whether in the Contract or otherwise, under which the services or materials were supplied;
 - .4 a description, including quantities where appropriate, of the services and materials that were supplied;
 - .5 the amount payable for the services or materials that were supplied, and the payment terms;
 - .6 the name, title, telephone number and mailing address of the person to whom payment is to be sent;
 - .7 where the invoice amount includes amounts charged on the basis of hourly rates, documentation in support of the amount claimed, including dates that services were performed, identity of the person(s) involved, the hours spent, and a description of the services performed;
 - .8 copies of any Change Orders for which the Contractor is claiming payment, together with all backup documents;
 - .9 a statement based on the schedule of values for the Work;
 - .10 a current valid clearance certificate issued by the WSIB;
 - .11 certificates of insurance confirming the placement of the insurance coverage required by this Contract;
 - .12 for the second and all subsequent applications for payment, a CCDC 9A Statutory Declaration stating that all accounts for services and materials and other indebtedness incurred by the Contractor for which the Owner may in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified matter in dispute;
 - .13 in respect of any subcontract whose value exceeds \$100,000, a statutory declaration in form CCDC 9B – 2001."

SC3.28 GC 5.7 FINAL PAYMENT

3.28.1 Delete paragraph 5.7.1 and replace it with the following:

- "5.7.1 When the Contractor considers that the Contract is completed, the Contractor shall deliver to the Owner a Proper Invoice for final payment, as provided in paragraph 5.6A.1 of GC 5.6A – PROPER INVOICE FOR FINAL PAYMENT."

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- 3.28.2 Amend paragraph 5.7.2 by adding the following to the end of that paragraph:

“Without limiting the generality of the foregoing, the application for final payment 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 5.4.6 of GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK have been received and accepted by the Consultant.”

- 3.28.3 Delete paragraph 5.7.4 and replace it with the following:

“5.7.4 Subject to the Owner's right to give notice of non-payment in accordance with the Act, the Owner will pay the amount payable under a Proper Invoice for final payment no later than 28 days after the date the Owner receives the Proper Invoice. Provided that the Owner's obligation to make payment shall not arise unless and until the Contractor's application for payment constitutes a complete Proper Invoice as provided in GC 5.6A – PROPER INVOICE FOR FINAL PAYMENT. For certainty, and without limitation, the Owner may refuse to pay all or any portion of an application for final payment where:

- .1 the application does not comply with all of the requirements of a Proper Invoice in GC 5.6A – PROPER INVOICE FOR FINAL PAYMENT; and/or
- .2 the amount applied for exceeds the amount stated in the certificate for payment issued by the Consultant pursuant to paragraph 5.7.3.

5.7.5 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.”

SC3.29 GC 5.8 WITHHOLDING OF PAYMENT

- 3.29.1 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 of any amount claimed in an application for payment, in a Proper Invoice, or in 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 the Contractor's failure to perform any of its material obligations under this Contract in a timely manner or at all.

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.”

SC3.30 GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

- 3.30.1 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 damages or additional payment under this Contract or a claim for an 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 shall 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 (including e-mail) direction agreeing to the change, in which case

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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.”

3.30.2 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.”

SC3.31 GC 6.2 CHANGE ORDER

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

“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.”

3.31.2 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; or
- .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	Column A Subcontractor Mark-Up on Material and Products only	Column B 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%

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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 percentage fee mark-ups described in paragraph 6.2.3.3 are intended to cover all profit, 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, head office and head office personnel costs, supervision, project management, general account items, small tools, estimating, safety, preparation of As-Built 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 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 as stated in a Change Order. 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.”

SC3.32 GC 6.3 CHANGE DIRECTIVE

- 3.32.1 Delete paragraph 6.3.3.
- 3.32.2 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) performing 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.
- 3.32.3 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 affects the critical path of the Work.”
- 3.32.4 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:

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- .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.”

SC3.33 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

3.33.1 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.”

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- 3.33.2 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.”

- 3.33.3 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.

- 3.33.4 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.”

SC3.34 GC 6.5 DELAYS

- 3.34.1 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 excluding any consequential, indirect or special damages, and excluding any loss of profit or loss of opportunity costs and damages, both direct and indirect, arising from or caused by such delay, and regardless of whether any such costs, damages or claims are made or incurred by the Contractor or any Subcontractor.”

- 3.34.2 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 loss of profit or loss of opportunity costs and damages, both direct and indirect, arising from or caused by such delay, and regardless of whether any such costs, damages or claims are made or incurred by the Contractor or any Subcontractor.”

- 3.34.3 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.”

- 3.34.4 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 employed or engaged by the Contractor directly or indirectly, 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. In addition, the Owner shall be reimbursed by the Contractor for all reasonable costs and expenses incurred by the Owner as a result of such delay, including all charges for services required by the Owner from the Consultant or any subconsultants, project managers, or others employed or engaged by the Owner.

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- 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."

SC3.35 GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

- 3.35.1 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 to a material extent, 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."

- 3.35.2 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."

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SC3.36 GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT

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

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

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

SC3.37 GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

3.37.1 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.

3.37.2 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

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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."

SC3.38 GC 9.1 PROTECTION OF WORK AND PROPERTY

- 3.38.1 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."

- 3.38.2 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 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."

- 3.38.3 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."

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SC3.39 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

- 3.39.1 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,”

- 3.39.2 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”

- 3.39.3 Delete paragraph 9.2.7.4.

- 3.39.4 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,”

- 3.39.5 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 its board members, trustees, 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 board members, trustees, officers, directors, employees and agents in respect of any loss, costs, expenses or fine 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.”

SC3.40 GC 9.4 CONSTRUCTION SAFETY

- 3.40.1 Amend paragraph 9.4.1 by deleting the first line of that paragraph and replacing it with the following: “The Contractor”.

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3.40.2 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 government agency.
- 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, the Consultant or any other representative of the Owner 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, board members, trustees, 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.”

SC3.41 GC 9.5 MOULD

3.41.1 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 loss of profit or loss of opportunity costs and damages, both direct and indirect, arising from or caused by such delay, and regardless of whether any such costs, damages or claims are made or incurred by the Contractor or any Subcontractor,”

SC3.42 GC 10.1 TAXES AND DUTIES

3.42.1 Amend paragraph 10.1.2 by adding the words “, without any mark-up” to the end of that paragraph.

3.42.2 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

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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 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."

SC3.43 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

- 3.43.1 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.

- 3.43.2 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."

SC3.44 GC 10.4 WORKERS' COMPENSATION

- 3.44.1 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.

SC3.45 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.

- 3.45.1 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."

- 3.45.2 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;

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- full replacement value, as basis for settlement;
- the following deductibles: for flood at \$50,000 and other at \$50,000.”

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

“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.”

3.45.4 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.”

SC3.46 GC 11.2 CONTRACT SECURITY

3.46.1 Amend paragraph 11.2.1 by deleting the words “specified in the Contract Documents” and replace them with “specified in the Act”.

3.46.2 Amend paragraph 11.2.2 as follows:

- (a) by deleting the words “If the Contract Documents require surety bonds to be provided, such” and replacing them with “Such”; and
- (b) by deleting the words “the latest edition of the CCDC approved bond forms” and replacing them with “the Act”.

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SC3.47 GC 12.1 INDEMNIFICATION

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

- “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.”

SC3.48 GC 12.2 WAIVER OF CLAIMS

3.48.1 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.

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

SC3.49 GC 12.3 WARRANTY

3.49.1 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."

3.49.2 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."

3.49.3 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."

3.49.4 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."

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SC3.50 PART 13 – OTHER PROVISIONS

3.50.1 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. 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 Project. If any lien is claimed, filed or registered or any written notice of a lien is delivered by reason of services or 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 a lien, secure the discharge, release, vacating or withdrawal of such lien or written notice of a 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 a 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

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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 legal costs on a full indemnity basis, disbursements, interest, borrowing, premium or other bonding costs and/or charges incurred by the Owner in releasing, vacating, discharging and/or otherwise dealing with a lien, written notice of a 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.

GC 13.6 AMENDMENTS TO THE CONTRACT

- 13.6.1 Except for the written direction referred to in paragraph 6.1.2 of GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, 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

**SIMCOE COUNTY DISTRICT SCHOOL BOARD
HOLLY MEADOWS ES - ROOFING, MECHANICAL & INTERIOR FINISHES UPGRADES**

PROJECT NO. 12464T

GENERAL INSTRUCTIONS

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PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.
- .2 These general requirements shall apply to every section of the work contained in these specifications, and shall apply to all contracts within this tender.
- .3 All tenders, quotes and proposals are subject to the Municipal Freedom of Information and Protection of Privacy Act and will be disclosed where the Board is required to do so for the purposes of complying with an Order of the Information and Privacy Commissioner.

1.2. WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises but is not limited to the following:
 - .1 Seal building HVAC system from areas of work. Remove seals at completion of work and reinstate building HVAC operation.
 - .2 Provide enclosures and air handling systems including HEPA filtration to contain and immediately collect all loose matter related to the work. Maintain air filtration systems until dust generating work has been finished for 48 hours.
 - .3 Provide adequate ventilation systems for all areas of work independent of building HVAC system.
 - .4 Remove all dust, debris, and waste generated by the work.
 - .5 Flooring Renewal:
 - .1 Replace existing flooring systems with new per drawings.
 - .6 Hot Water Renewal:
 - .1 Replace 2 existing tanked hot water heaters with new tanked hot water heater equipment per mech.
 - .2 Revise associated roofing penetrations per roofing drawings.
 - .7 Paint Renewal:
 - .1 Prepare and repaint existing walls, bulkheads, hollow metal doors and frames, stair stringers, guards, railings, and exposed structural steel per drawings.
 - .8 Stair Renewal:
 - .1 Replace existing stair risers and treads with new precast treads as shown in architectural and structural drawings.
 - .2 Repair existing stringers and structure per structural drawings.
 - .9 Screen Replacement:
 - .1 Replace existing curtain wall framing, doors, and hardware as shown in architectural drawings.
 - .10 Millwork Revisions:
 - .1 Remove existing millwork. Patch effected wall and flooring finishes as shown in drawings.
 - .11 Exhaust Fan Replacement:
 - .1 Replace all rooftop exhaust fans per mech.
 - .12 Roofing Replacement:
 - .1 Replace roofing systems per roofing drawings.
 - .13 All necessary general, architectural, structural, mechanical and electrical work for the above to achieve Substantial Performance of the Work as listed in Section 00100 INSTRUCTIONS TO BIDDERS.

1.3. CODES AND BYLAWS

- .1 2017 Ontario Building Code (Ont. Reg. 332/12 as amended by O. Reg. 191/14) and By-laws of Municipality shall govern this work. Most stringent requirements indicated by above shall govern.

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- .2 Where the by-law, code or official standard is quoted, it shall mean latest edition including all revisions or amendments in effect at time of submission of tenders.

1.4. SUPERINTENDENCE

- .1 Provide full time superintendent staff at the place of the Work during execution of each part of the Work.
- .2 Provide qualified superintendent staff with minimum 5 years documented experience in projects of comparable type and complexity. The supervisory staff assigned to the Project shall also be fully competent to implement efficiently all requirements for scheduling, coordination, field engineering, reviews, inspections and submittals defined in the Specifications.
- .3 Superintendent assigned to the Project shall be "Gold Seal Certified" as per Canadian Construction Association; or a superintendent that can demonstrate the requisite experience and success relevant to this Project to the sole satisfaction of the Owner.

PART 2: EXECUTION

2.1. SECURITY

- .1 Ensure that all construction areas are secured at all times and locked when no construction personnel are in attendance. Restrict access in construction areas to construction personnel only. Lock up construction tools when not in use.

2.2. SITE DIMENSIONS

- .1 Before proceeding with shop drawings, fabrication, or supply of each new part of the Work, examine installed parts of the Work and verify as-built site dimensions to coordinate previously built construction with pending construction.

2.3. SIGNS, ADVERTISING AND PUBLICATIONS

- .1 Do not erect or display devices, signs or advertisements of labour, materials or services provided to the Work unless authorized to do so, in writing, by the Owner. Signs relative to fire, danger and safety are exempted from this requirement.
- .2 Do not consent to advertising of the Work, of any kind, without the Owner's and the Consultant's written acceptance. Do not consent to mention of the Work in any advertising or articles in any publication relating to the Work without the acceptance of the copy and written permission from the Owner and the Consultant.

2.4. PARKING AND STORAGE

- .1 Limited parking is available to the contractor on site and shall be permitted only in the staging area indicated on the Drawings or as designated by the Architect or Owner. Other parking to be provided and arranged for by the Contractor as required.
- .2 Adjacent Municipal property / roadways are not to be used for construction materials storage.
- .3 Confine storage of materials and Contractors office to areas on Owner's property within the hoarded area and as indicated on the drawings.

2.5. PROCEDURE AND SUPPLY OF CRITICAL MATERIALS

- .1 Supply products in ample time to be installed into the Work together with templates, measurements and other information required for placement.

2.6. RESTRICTIONS

- .1 Restrict non-construction personnel from the construction site, except for Contractor-authorized visitors.

2.7. DAILY CONSTRUCTION CLEANING

- .1 At all times when the school is occupied by staff and/or students, the Contractor is to take extra care in the daily cleanup of the site to ensure any possible hazards have been removed.

**SIMCOE COUNTY DISTRICT SCHOOL BOARD
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- .2 **Clean and tidy the Work areas daily.** Keep dust and dirt to a level acceptable to the Owner.
- .3 Remove rubbish and surplus materials promptly and dispose of in a legal manner. Do not allow scrap piles to accumulate.
- .4 Provide garbage bins for the disposal and removal of garbage.
- .5 Provide complete cleaning of each area of the building as construction activities are completed.

2.8. PERMITS

- .1 The Owner will obtain and pay for the building permit.
- .2 The contractor is responsible for notifying the authorities having jurisdiction for reviews throughout the project.
- .3 The contractor is responsible for obtaining all other permits.

2.9. SAFETY

- .1 Conform to and enforce strict compliance with Occupational Health & Safety Act, latest revised edition, including amendment call "Workplace Hazardous Materials Information Systems (WHMIS)" and including amendment called Bill 208 requiring creation of health and safety representatives/committee.
- .2 The Contractor shall observe all health and safety requirements including the following procedures, methods and responsibilities:
 - .1 The Contractor will take all necessary steps to protect personnel (workers, visitors, general public, etc.) and property from any harm during the course of the contract.
 - .2 All work procedures will be in accordance with Board and legislated standards.
 - .3 All equipment shall be in safe operating condition and appropriate to the task.
 - .4 The Contractor shall ensure that only competent personnel are permitted to work on site. The Owner will throughout the term of the contract also remove from the site any persons not observing or complying with safety requirements.
 - .5 The Contractor shall provide competent personnel to implement their safety program and ensure that the Owner's standards and those of the Ontario Health and Safety Act are being complied with.
 - .6 The Consultant will monitor every week to ensure that safety requirements are met and that safety records are properly kept and maintained. Continued disregard for safety standards can cause the contract to be cancelled and the Contractor or subcontractors removed from the site.
 - .7 The Contractor will report to the Owner, Consultant and jurisdictional authorities any accident or incident involving Contractor, Board or public personnel and/or property arising from the Contractor's execution of the work.
 - .8 The Contractor shall ensure that every "controlled product" used at the work site shall meet the labelling requirements and have an updated corresponding material safety data sheet as per the Workplace Hazardous Materials Information System legislation. The Contractor shall ensure that all the material safety data sheets are available at the work site.
 - .9 Designated Substances and Asbestos:
 - .1 Do not use or cause to be placed, either temporarily during construction or permanently as part of any construction assembly, a material or piece of equipment that has any form of asbestos content. No exceptions to this rule will be permitted.
 - .2 If the Contractor locates asbestos containing materials or a designated substance during the project then the Contractor shall cease work and seal the area and immediately contact the Consultant and School Board personnel.
 - .3 The Board shall arrange to remove the asbestos or designated material.

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- .4 The Contractor shall comply with all regulations relating to asbestos. The removal and disposal of asbestos shall be in accordance with the Ministry of Environment and Energy Regulation 347 and Ontario Ministry of Labour Occupational and Safety Act 838.

2.10. SPECIAL PROJECT CONSIDERATIONS

- .1 Owner's Continued Use of Building & Site:
 - .1 Functions in the existing school must continue uninterrupted during school hours of operation.
 - .2 Where any work is to occur during the school year comply with the following requirements:
 - .1 The Contractor must plan, schedule and provide for safe exiting of students, staff and members of the public from all areas of the existing building and any areas of new construction which are to be occupied during the course of the work. Any work which would impede the safe access from occupied areas must be scheduled and completed during those periods of time that the building is unoccupied. The Contractor must provide any temporary hoarding and construction necessary to protect or provide access to exits and exits affected by the work during the course of construction. All scheduling, temporary provisions etc. must be reviewed by and adjusted as required to meet the approval of the Owner and Authorities having jurisdiction.
 - .2 Contractor shall ensure that mechanical / electrical services, sprinkler and alarm systems, P/A system, parking/delivery systems, etc. necessary for Owner's safe occupancy and continued functions are properly maintained and operating. The Contractor shall be responsible for the cost of any temporary arrangements necessary due to construction, and whether through accident or planning, required to maintain this functionality including any necessary interim or temporary commissioning or verification. During the school year, interruption of existing services will only be permitted outside of school's normal operating hours of 6:00 am to 4:00 pm.
 - .3 Contractor forces shall ensure that work is advanced with minimum disruption and inconvenience to Owner's continued functions and shall show willingness at all times to meet with Owner to discuss and seek solutions to problems that may arise. **Work that is intrusively noisy in the Owner's opinion must be scheduled outside the school's normal operating hours of 6:00 am to 4:00 pm.**
- .2 Contractor's Use of Site: Contractor forces shall restrict their operations to least amount of site required and shall place items on site only in locations approved in advance by Owner.
- .3 Procurement and Supply of Critical Products:
 - .1 Before submitting a tender, verify that:
 - .1 Adequate supplies of critically scheduled products and equipment, upon which the tender is based, will be furnished.
 - .2 The requirements of the construction schedule will be met.
 - .3 The Work will be executed in accordance with the Tender Documents.
- .4 Phasing and Scheduling of Construction:
 - .1 It is intended that the early award of the contract allow the Contractor to **fully prepare** for construction on site in accordance with the following milestone dates. The Contractor is to obtain and arrange for all necessary approvals, material, equipment and manpower etc. as required to ensure that construction can proceed without delay and in a timely manner.
 - .2 The Contractor is to schedule, phase and complete the work in **strict accordance** with the dates listed in Section 00100 INSTRUCTIONS TO BIDDERS.

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- .3 Prior to award of contract the successful bidder will be required to prepare and submit the following completely detailed proposed schedule for the Work:
 - .1 A computer generated Bar Chart construction schedule showing actual progress charted against scheduled Work and incorporating the milestone dates listed in Section 00100 INSTRUCTIONS TO BIDDERS.
 - .2 Conform to the requirements of Section 01200. Schedules required as part of tendering requirements may be accepted as the Construction Progress Schedule at the Consultant's discretion.
- .5 Special Coordination Meeting:
 - .1 All above noted special project considerations shall be taken as general guide by bidders so that all related costs can be included in Base Bid submissions.
 - .2 Special meeting will be held immediately upon award of contract and attended by Owner, Consultants and reps of all major Contractor forces. Purpose of that meeting will be to thoroughly discuss, refine and finalize on details related to Owner's Continued Function, Phasing and Scheduling of Construction, Contractor's Use of Site, methods to be followed to maintain Security of Building, communication lines amongst parties, advance notifications required prior to performing certain work, etc.

END OF GENERAL INSTRUCTIONS

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CASH ALLOWANCES

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PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.
- .2 Contractor to be responsible for the co-ordination and execution of each cash allowance item as for all other aspects of the work.
- .3 For each cash allowance item and when requested by the Consultant, provide the following services and/or information:
 - .1 Assist the Consultant to determine qualified suppliers,
 - .2 Obtain proposals from suppliers. A minimum of three quotations are to be obtained unless otherwise indicated.
 - .3 Make appropriate recommendations for the consideration of the Consultant.
 - .4 Notify the Consultant of any effect anticipated by selection of products or supplier under consideration regarding contract schedule and cost.
 - .5 On notification of selection by Consultant, enter into purchase agreement with designated supplier.
- .4 Expend portions of the cash allowance only on Consultant's written instructions.
- .5 The value of Cash Allowances covers the net cost to the Contractor of all aspects of the work related to the cash allowance items, unless otherwise indicated in the documents.
- .6 The Contract Price, and not the Cash Allowance, includes the Contractor's overhead and profit in connection with the cash allowance.
- .7 The Contract Price will be adjusted by written order to provide for an excess or deficit to the Cash Allowance. In the case of an excess, the Contractor shall be allowed an amount for overhead and profit as set out in the Documents.
- .8 Progress payments on account of work authorized under the cash allowance shall be included in the Consultant's monthly certificate for payment.
- .9 A schedule shall be prepared by the Contractor for the approval of the Consultant to show when items called for under Cash Allowance must be authorized by the Consultant so that progress of the Work will not be delayed.

1.2. CASH ALLOWANCE ITEMS

- .1 The total value of the Cash Allowance shall include, but not be limited to, the following items of work:
 - .1 Testing and Inspection:
 - .1 For the provision of independent testing and inspection by the Owner's agent,
 - .2 Steel Stringer Repair:
 - .1 For the provision of repairs to existing steel stringers deemed
 - .3 Finish Hardware Inspection:
 - .1 For the provision of inspections by Finish Hardware consultant upon completion of final door installations.
 - .4 Record Drawings:
 - .1 For the production of electronic record drawings by the consultants based on contractor site documents,

1.3. TOTAL VALUE OF CASH ALLOWANCE

- .1 Include in the Base Bid the following Total per Section 00100 Instructions to Bidders:
 - .1 **Total: \$11,000.00**

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END OF CASH ALLOWANCES

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. CODES AND BYLAWS, REGULATIONS, ORDINANCES

- .1 2017 Ontario Building Code (Ont. Reg. 332/12 as amended by O. Reg. 191/14), and By-laws of Municipality shall govern this work. Most stringent requirements indicated by above shall govern.
- .2 Where the by-law, code or official standard is quoted, it shall mean latest edition including all revisions or amendments in effect at time of submission of tenders.
- .3 Comply with requirements, regulations and ordinances of other authorities having jurisdiction.
- .4 Where it is necessary to carry out work outside property lines, such as sidewalks, paving, concrete curbs, service connections, comply with applicable requirements of municipal authorities having jurisdiction.

1.3. FIRE PROTECTION REQUIREMENTS

- .1 Refer to technical Sections of Specifications and Drawings for specific fire protection requirements.
- .2 Test methods used to determine fire hazard classification and fire endurance rating shall be as required by the Building Code.
- .3 Upon request, furnish Consultant with evidence of compliance with project fire protection requirements.
- .4 Materials and components used to construct fire rated assemblies and materials requiring fire hazard classification shall be listed and labeled, or otherwise approved, by fire rating authority. Labeled materials and their packaging shall bear fire rating authorities label showing product classification.
- .5 Fire rated door assemblies shall include doors, frame, anchors and hardware and shall bear label of fire rating authority showing opening classification and rating.
- .6 Materials having a fire rating classification shall be applied / installed in accordance with manufacturer's directions.
- .7 Fire rated assemblies shall be constructed in strict accordance with applicable assembly design report. Deviation will not be allowed.
- .8 Construct fire rated assemblies as continuous, uninterrupted elements except for permitted openings. Extend fire rated walls and partitions from floor to underside of structural deck above.
- .9 Fill and patch voids and gaps around openings and penetrations in and at perimeter of fire rated assemblies so as to maintain continuity and integrity of fire separation and smoke seal to the requirements of jurisdictional authorities.

1.4. WASTE MANAGEMENT

- .1 Conform to and enforce strict compliance with Occupational Health & Safety Act, latest revised comply with applicable requirements of the Ministry of Environment and Energy governing waste management.

END OF REGULATORY REQUIREMENTS

PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. OAC MEETINGS

- .1 Purpose: to review policy and the status of money and the schedule.
- .2 Period: monthly at a mutual acceptable time.
- .3 Attendees:
 - .1 Owner
 - .2 Consultant
 - .3 Contractor
- .4 Chair: the Consultant
- .5 Party responsible for record and distribution of minutes of the meetings to each participant within five working days: the Consultant
 - .1 Minutes shall record decisions, comments, instructions required and a report on the schedule

1.3. SITE COORDINATION AND PROGRESS MEETINGS

- .1 Purpose: to identify and resolve construction coordination items.
- .2 Period: every second week on a mutually acceptable schedule
- .3 Attendees:
 - .1 Contractor's project manager and site supervisor
 - .1 Subcontractors invited by the Contractor
 - .2 Owner
 - .3 the Consultant
 - .1 Sub-consultants invited by the Consultant
- .4 Chair: Consultant
- .5 Party responsible for recording and distribution of minutes of the meetings to each participant (Contractor responsible for distribution to Subcontractors) within five working days: Consultant
 - .1 Minutes shall record decisions, comments, instructions required and a report on the schedule
- .6 Submit the record of progress reports at site coordination and progress meetings
- .7 Present the as built Contract Documents at site meetings

1.4. SCHEDULE OF THE WORK

- .1 Submit the following schedules:
 - .1 Construction Progress Schedule
 - .2 Submittal Schedule for Shop Drawings and Product Data
 - .3 Submittal Schedule for Samples
- .2 Format:
 - .1 Prepare a detailed schedule in the form of a computerized bar chart using Microsoft Project or equivalent software with the following as a minimum:
 - .1 Provide a separate bar for each trade or operation.
 - .2 Provide a horizontal time scale identifying the first work day of each week.
 - .3 Format for listings: the List of Contents of this Specification.
 - .4 Mechanical and Electrical trades to be identified by tasks and phases.
- .3 Submission:

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PROJECT ADMINISTRATION

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- .1 Submit initial schedules within 25 days of award of Contract.
 - .2 Update and resubmit the schedule if progress falls more than 2 weeks behind the current schedule.
 - .3 Submit updated progress schedule with each application for payment.**
 - .4 Construction Progress Schedule:
 - .1 Provide schedule with activities itemized to enable the Contractor and the consultant to monitor the progress of the Work.
 - .2 Identify those items which are critical to the orderly progress of the Work.
 - .3 Identify target achievement dates for the following as a minimum:
 - .1 Milestone dates for completion of various phases of the work,
 - .2 Testing of all building systems and operations.
 - .3 Substantial Performance.
 - .4 Completion of all deficiencies.
- 1.5. PROGRESS PAYMENT SCHEDULE**
- .1 Prior to commencement of the Work, submit a detailed Progress Payment Schedule to the Consultant for review.
 - .2 Submit progress payment schedule with values applied against the following:
 - .1 Mobilization and start-up
 - .2 General overhead expenses
 - .3 Each cash allowance
 - .4 Each Section of the specification (Divisions 2-16)
 - .5 \$1,000 for architectural as-built documents & manuals
 - .6 \$2,000 each for mechanical and electrical as-built documents & manuals
 - .7 \$2,000 each for civil and site electrical as-built documents & manuals
 - .8 \$2,000 for structural as-built documents & manuals
 - .3 With each Progress Billing Breakdown submit statutory declarations, WSIB certificate of clearance, current construction schedule.
- 1.6. PERSONNEL**
- .1 Appoint a senior member of staff, with full authority to commit the Contractor to methods and schedules for construction, to participate actively in the administration and maintenance of the detailed construction schedule. Provide the necessary information on progress of the Work to enable a status report to be produced every two weeks.
 - .2 A senior member of staff must be available on a 24hr /day 7 day/week basis to respond to emergency situations occurring as a result of construction. Provide contact names and telephone numbers of personnel responsible for this function.
- 1.7. PROGRESS REPORTS AND CONSTRUCTION RECORDS**
- .1 Maintain a permanent written record of the progress of the Work at the Place of the Work, open to inspection by the Consultant.
 - .1 Record the dates of commencement and completion of the different Subcontractor's part of the Work.
 - .2 Record the following on each report:
 - .1 Dates of construction
 - .2 Division of the Work upon which each group is engaged.
- 1.8. AS-BUILT DOCUMENT MAINTENANCE**
- .1 During the progress of the Work maintain the following, in the complete sets, at the Place of the Work:
 - .1 As-built Contract Documents,
 - .2 Shop Drawings
 - .2 Mark changes, revisions, deletions and additions to the Work clearly, neatly, accurately and promptly

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1.9. DEFICIENCIES

- .1 Correct deficiencies noted by the consultant, in accordance with the contract documents. The contractor will be deemed to have corrected all prior and subsequent typical deficiencies.
- .2 Do not proceed with the installation of the subsequent parts of the Work until deficiencies have been corrected.

END OF PROJECT ADMINISTRATION

PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. SHOP DRAWING SCHEDULE

- .1 Submit a shop drawing schedule, in accordance with GC 34.4, which allows for a minimum of 14 days for the consultant to review the shop drawings, from the date of receipt, to the date of postage with a courier. If the consultant requires resubmission of the shop drawings allow for an additional 14 days for review.
- .2 Re-submit the schedule monthly w/ application for progress payment to correspond to changes in the Construction schedule. Maintain the Consultants 14-day review period in the schedule re-submissions.

1.3. FABRICATION

- .1 Do not fabricate until shop drawings are indicated as "REVIEWED" or "REVIEWED AS NOTED".

1.4. CONSULTANT'S SHOP DRAWING REVIEW

- .1 The consultant's review of shop drawings is for the sole purpose of ascertaining conformance with the general design concept.
- .2 The consultant's review does not provide approval of the items. This remains the Contractor's responsibility.
- .3 Among other things, the Contractor remains responsible for:
 - .1 Detail design inherent in the shop drawings
 - .2 Errors and omissions in the shop drawings
 - .3 Meeting all requirements of the Contract Documents
 - .4 Confirmed and correlated site dimensions
 - .5 Information that pertains solely to fabrication processes, techniques of construction and installation.
 - .6 Co-ordination of the work of all trades

1.5. SHOP DRAWING REQUIREMENTS

- .1 Drawings are to be drafted professionally in a neat, legible manner.
- .2 Indicate the following information at a minimum as applicable:
 - .1 Plans, sections and details
 - .2 Verified site dimensions
 - .3 Materials thicknesses and finishes
 - .4 Methods of setting and sealing
 - .5 Methods of securing, fastening and anchoring including field connections.
- .3 Do not make product substitutions on shop drawings without the consultant's written acceptance in accordance with the product substitution proposal process. Replace unaccepted product substitutions and complete the Work in accordance with the Contract Documents.
- .4 Determine which shop drawings the Municipality Building Authority will require for its approval and submit them according to the Municipality's procedures.

1.6. SHOP DRAWING PROCEDURES

- .1 Execute the following prior to submitting all shop drawings to the consultant:
 - .1 Review, check and mark-up the shop drawings with your comments and revisions.
 - .2 Stamp each shop drawing.
 - .3 Fill-in the contractor's review date and signature of the contractor's reviewer.

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- .2 Shop drawings which do not conform to the above criteria will be automatically returned without review and any resulting delays will be the contractor's responsibility.
- .3 Submit shop drawings in PDF format for consultant review to each of the following:
 - .1 The consultant,
 - .2 The sub-consultant responsible for the scope of work, and,
 - .3 The Owner.
 - .4 1 original of each stamped shop drawing to be returned to the Contractor and 4 prints of each stamped shop drawing which will not be returned to the contractor.
 - .5 If catalogue cuts are acceptable to the consultant, submit 4 copies of catalogue cuts for review. Only one set will be returned to the Contractor.
- .4 Do not resubmit shop drawings indicated as "REVIEWED" or "REVIEWED AS NOTED". Contractor is responsible to make copies of reviewed drawings as required for their own use, for distribution to Subcontractors, suppliers, etc., for submission to Building Department (if requested) and for submission to Owner in Manuals at Project close-out.
- .5 Re-submit shop drawings indicated as "REVISE AND RESUBMIT" with the required changes and comments addressed. Insert the letter "R" after the shop drawing number on resubmitted shop drawings, re-date and re-sign. Identify revisions from earlier submissions graphically on the revised shop drawings.

END OF SHOP DRAWINGS

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS:

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.
- .2 The requirements specified in this Section apply to the independent inspection and testing specified under technical specifications Sections and / or as directed by Consultant.
- .3 Requirements specified in this Section do not apply to the following:
 - .1 Inspection and testing required by laws, ordinances, rules and regulations and orders of public authorities.
 - .2 Testing, adjustment and balancing of mechanical and electrical systems and equipment.
 - .3 Inspection and testing carried out exclusively for the Contractor's convenience.
 - .4 Tests specified in Division 2 to 16 inclusive, to be included in the Contract such as mill tests, certificates of compliance and testing to be carried out by the Contractor under direction of the Consultant
- .4 Failure by independent testing agency to detect defective work or materials shall not in any way prevent later rejection, when such defect is discovered, nor shall it obligate Consultant for final acceptance.
- .5 Independent inspection and testing specified in this Section is not meant to replace or supplement Contractor's own quality control nor relieve Contractor of his contractual obligation to meet requirements of Contract Documents.
- .6 Costs for independent inspection and testing, but not covering Contractor's related responsibilities specified hereinafter, are to be **paid for by the Contractor through the Cash Allowance (Section 01200)**.

1.2. DUTIES OF TESTING AGENCY :

- .1 Testing Agency is expected to do the following:
 - .1 Act on a professional and unprejudiced basis and carry out inspection and testing functions to establish compliance with requirements of Contract Documents.
 - .2 Check out work as it progresses and prepare reports stating results of tests and conditions of work and state in each report whether specimen tested conform to the requirements of the Contract Documents, specifically noting deviations.
 - .3 Distribute reports in PDF format to each of the following:
 - .1 Consultant:
 - .2 Sub-Consultants affected:
 - .3 Contractor:
 - .4 Building Department:
 - .5 Owner:
 - .4 Testing agency is not authorized to release or amend any requirements of Contract Documents, nor to approve or accept any portion of the work.

1.3. CONTRACTOR'S RESPONSIBILITIES:

- .1 Contractor shall be responsible for and pay the expense of all of the following:
 - .1 Notification of Consultant and testing agency minimum 48 hours in advance of operations to allow for assignment of personnel and scheduling of tests without causing a delay in work.
 - .2 Provide testing agency with access to work at all times.
 - .3 Supply material samples for testing.
 - .4 Supply casual labour and other incidental services required by testing agency.
 - .5 Provide facilities for the storage of samples.

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- .6 Where materials are specified to be tested, deliver representative samples in required quantity to designated testing laboratory.
- .7 Make good work disturbed by independent testing and inspection
- .2 When initial inspection and testing indicates non-compliance with Contract Documents, any subsequent re-inspection and testing occasioned by non-compliance shall be performed by same testing agency and cost thereof borne by Contractor.

END OF QUALITY CONTROL

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PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. ADMINISTRATIVE REQUIREMENTS

- .1 Provide and maintain temporary utilities, facilities and controls in order to execute the work expeditiously.
- .2 Maintain temporary utilities, facilities and controls in a neat and tidy condition.
- .3 Remove from site all such work after use.

1.3. NOISE REDUCTION

- .1 In addition to requirements of the anti-noise by-laws, take special precautions and apply noise abatement measures to reduce public exposure to noise to a minimum. These precautions and measures consist of, but are not limited to, the following:
 - .1 Shields or other physical barriers to restrict the transmission of noise.
 - .2 Soundproof housings or enclosures for noise producing machinery such as compressors, pumps, motors or generators.
 - .3 Efficient intake and exhaust silencers on air equipment.
 - .4 Efficient intake and exhaust mufflers on internal combustion engines.
 - .5 Conducting truck loading, unloading and hauling operations so that noise is kept to a minimum.
 - .6 The use of electric rather than internal combustion engine power on chain equipment in fixed locations, or other equipment where electric power is available.
 - .7 Placing stationary noise producing equipment at maximum distance from public areas.

1.4. UTILITIES

- .1 Equipment, Mechanical and Electrical Apparatus and Systems
 - .1 The Contractor is to visit the site prior to bidding and determine exactly the nature and extent of the mechanical and electrical work which may require relocation, temporary or permanent removal and replacement to facilitate the installation of the new work. Verification of the existing conditions must be determined prior to bidding.
 - .2 If deemed necessary, adequate allowance is to be made in the Contract Price to cover all costs of temporary removal and replacement or relocation of existing mechanical and electrical equipment or any other systems using appropriate tradesmen.

1.5. TEMPORARY UTILITIES

- .1 Temporary Electricity
 - .1 Existing power system may be utilized to provide a source of electricity for adequate temporary lighting, operation of power tools, and to ensure proper completion of the work.
 - .2 Provide and maintain any necessary additional temporary electrical systems to requirements of CSA C22.1-1990, Canadian Electrical Code, Part 1 – Temporary Wiring.
- .2 Temporary Heating, Cooling and Ventilating
 - .1 Under no circumstances is air handling equipment to be used to help heat a facility until the project has been substantially cleaned or has reached the point of substantial performance and as agreed by Board staff and the consulting team.
 - .2 Upon approval of the Owner, the permanent heating system of the building, or portions thereof, may be used when available. Be responsible for repair of damage thereto.
 - .3 On completion of work, replace filters in permanent heating system and clean all ducts.

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- .4 Provide and maintain any necessary additional temporary heating and ventilating systems.
- .5 Provide minimum one air change per hour for enclosed areas receiving architectural finishes.
- .6 Prior to commencement of work using hazardous or volatile adhesives, coatings or substances, install adequate mechanical ventilation.
- .7 Do not allow excessive build-up of moisture in building. Provide dehumidification as required.
- .3 Temporary Lighting
 - .1 Provide and maintain temporary lighting throughout the work for emergency evacuation, safety, security and performance of the work.
 - .2 Permanent lighting may be used during construction.
- .4 Temporary Telephone
 - .1 Provide and pay for temporary telephone service and fax machine on a separate line necessary for own use and use of Consultant during construction. Make available for all trades.
- .5 Temporary Water
 - .1 The existing building service may be utilized as a source of potable water for construction use. Provide any necessary temporary extension required for construction.

1.6. CONSTRUCTION FACILITIES

- .1 Field Offices and Sheds
 - .1 The Contractor's offices may be located within the building as directed by the Owner.
 - .2 Contractor storage is to be provided by the Contractor and located at the Place of Work as directed by the Owner and/or as indicated on the drawings.
 - .3 Provide and maintain in clean condition, adequately lighted, heated (min. 20 degrees C) and ventilated office with sufficient space for conducting OAC meetings (20 persons), superintendent's office, filing documents and laying out drawings.
 - .4 Furnish office with drawing layout table, meeting table and sufficient quantity of padded chairs for meeting attendees.
 - .5 Do not store building materials or equipment in construction office.
 - .6 Provide the following field office facilities:
 - .1 Telephone services for Contractor's own use.
 - .2 "No Smoking" signs.
 - .7 Provide and maintain in a clean, orderly condition, lockable, weatherproof sheds for storage of tools, equipment and materials.
 - .8 Provide proper flammable and explosive materials storage.
- .2 First Aid
 - .1 Provide emergency and first aid equipment as prescribed by authorities having jurisdiction.
 - .2 Mount emergency and first aid equipment in a prominent and easily accessible location with easily identifiable labels.
 - .3 A minimum of one person trained in basic first aid shall be on site at all times. This person may perform other duties, but must be available immediately to render first aid when needed. Provide documentation confirming first aid training when requested by Consultant.
- .3 Sanitary Facilities
 - .1 An existing washroom will be designated for Contractor use for the duration of the Work during Summer Vacation. Contractors are not permitted to use any other washroom in the building. The Contractor is responsible for the regular maintenance of this washroom to keep it tidy and odour free. The Contractor will immediately and

thoroughly clean and disinfect any washroom used by Contractors other than the authorized washroom.

1.7. PROTECTION

- .1 Work shall include necessary methods, materials, and construction to ensure that no damage or harm to existing building, the Work, materials, property and persons results from Work of this Contract.
- .2 Protect adjacent private and public property: make good damage.
- .3 Protect finished surfaces of completed work and existing building from damage by restriction of access or by use of physical means suitable to the material and surface location. Where work must be performed over finished floors, provide protection against damage and debris.
- .4 Protection of Public Area:
 - .1 Fully cover openings over public areas to protect against falling articles during school operating hours.
- .5 Protection of Existing Equipment
 - .1 Equipment and existing work moved or altered to facilitate construction, moved material or equipment must be stored, protected with dust-tight covers and subsequently returned to its original location. The Consultant's approval is required for the installation of temporary support devices into existing roof or wall members for the erection of equipment or machinery. Repair roof and wall members used for this purpose to the satisfaction of the Consultant.
 - .2 All existing (in use) and new equipment damaged while carrying out the Work must be restored with new products matching the original equipment.
- .6 Above and Underground Services
 - .1 The Contractor will be responsible for the protection of all pipes, ducts, cables, conduits, wires and other services against damage arising from the execution of work during the Contract period. The Contractor will take all necessary precautions to locate the services.
 - .2 The Contractor will be responsible for making good to the satisfaction of authorities having jurisdiction any damages to services resulting from his execution of work without any additional cost to the Board.
- .7 Fire Equipment
 - .1 Take precautions to prevent fires. Comply with local fire department regulations.
 - .2 Supply and install adequate fire fighting equipment of a type appropriate to the hazard anticipated.
- .8 Protection of Workers
 - .1 Workers must comply with the Occupational and Health and Safety Act and Regulations for Construction Projects.

1.8. SITE MAINTENANCE

- .1 Maintain the site and adjacent premises in a clean and orderly condition, free from debris and other objectionable matter. Remove rubbish and surplus material, equipment and structures (immediately). If the site is not cleaned (within 48 hours after the Contractor has been instructed to do so,) the Consultant may order the site cleaned and retain the cost from monies due, or to become due, to the Contractor.

1.9. PUBLIC CONVENIENCE AND SAFETY

- .1 Products which are not in use must be stored in storage areas reserved by the Contractor for such purpose, and must not be left lying on streets, sidewalks, boulevards or elsewhere within public view except with the Consultant's and Board's permission. Products which the Consultant may permit to be stored elsewhere other than in the Contractor's storage areas must be neatly stacked or otherwise disposed and must be so maintained.
- .2 Maintain sidewalks and decked areas at and adjacent to the site in a safe condition throughout the Contract. Promptly remove ice and snow.

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- .3 Keep haul routes free at all times from materials spilled on the street surfaces and maintain the streets in clean condition to the satisfaction of the Consultant and the street authorities.
- .4 The Consultant may inspect haul routes, the site and adjacent premises daily and may halt operations, withhold payment or carry out such additional operations as necessary, deducting the cost from monies due, or to become due, to the Contractor.
- 1.10. ACCESS AND EGRESS TO SITE**
 - .1 Site access and egress will be as directed by the Board or Consultant.
- 1.11. SITE VISITORS**
 - .1 During the progress of the Work, afford access to visitors duly authorized by the Board or Consultant and facilitate inspections or tests they may desire to make.
- 1.12. CONTRACTOR'S USE OF SITE**
 - .1 Limit areas of work and storage as directed on site by the Board or Consultant. The designated areas for storage of materials will be established and maintained.
 - .2 Do not encumber site with materials or equipment.
 - .3 Move stored products or equipment which interfere with daily operations of the schools.
 - .4 Obtain and pay for use of additional storage or work needed for operation.
 - .5 Do not obstruct entrances, stairs or fire exits. The Contractor must maintain all fire routes.
- 1.13. CONSTRUCTION AIDS**
 - .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
 - .2 Hoists and cranes shall be operated by qualified operator.
 - .3 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms and temporary stairs as required for the safe execution of the work.
- 1.14. VEHICULAR ACCESS AND PARKING**
 - .1 Provide for access of emergency vehicles at all times.
 - .2 Parking will be permitted on site within the construction staging area designated on the Drawings and as directed by Consultant.
- 1.15. TEMPORARY FIRE PROTECTION**
 - .1 Provide and maintain temporary access routes to exits, clear and visibly identified 24 hours a day.
- 1.16. BARRIERS**
 - .1 Protective Enclosures:
 - .1 Provide and maintain temporary hoardings around construction as shown on the Drawings and / or as required to enclose the Work at all stages and phases and as required by jurisdictional authorities.
 - .2 Temporary hoarding shall be as follows:
 - .1 **Construction hoarding (site perimeter): 1800 mm high chain link fencing c/w all required posts and rails.** Provide lockable gates for access to site by workers and vehicles. Enclose perimeter of construction area and/or as indicated on the drawings.
 - .2 **Temporary construction hoarding:** "fast fence" purpose-made units securely fastened and braced.
 - .3 **Interior Hoarding:** Provide fire-rated, dust tight, temporary enclosures (steel studs, insulation and gypsum board), **rated for a minimum 1 hour**, where indicated on Drawings and as required to separate occupied areas from construction areas. Provide hollow metal doors and frames, c/w lockable hardware and 45 minute fire rating, where required for access.
 - .3 Provide and maintain full safety protection at open shafts in floors, roof decks and other working surfaces.

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- .4 Provide and maintain suitable warning signs as required by all applicable regulations and by-laws.
 - .2 Weather Enclosures:
 - .1 Provide temporary, fire-rated (min. 1HR), weather tight enclosures to unfinished door and window openings, tops of shafts and other openings in floors and roofs and where indicated on the Drawings.
 - .2 Provide weather tight, vandal-proof, insulated (R12 min.) enclosures between existing building and/or finished new construction and areas of construction where the new construction is not weather tight and / or heated.
 - .3 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
 - .3 Dust Barriers:
 - .1 Provide dust tight screens or partitions to localize dust generating activities, and for the protection of workers, occupied spaces, finished areas of work and the public. Seal area from existing HVAC ductwork.
 - .2 Provide HEPA air filtration units prior to beginning dust generating activities. Air filtration is to be maintained until 48 hours after dust generating activities have been completed.
 - .3 Provide fresh air ventilation to enclosed space independent of building HVAC systems.
 - .4 Maintain and relocate protection until such work is complete.
 - .4 Security Measures:
 - .1 Maintain security of construction site by control of access through enclosing fences, barricades and hoardings during times work is in progress, and by locking hardware otherwise.
 - .2 After new building is enclosed, maintain its security by adequate barriers to entry, and by temporary doors equipped with locking hardware.
 - .3 Maintain security at all times during shut-downs due to strikes or lockouts.
 - 1.17. PERCUSSIVE DEVICES**
 - .1 The Contractor may not, under any circumstances, use percussion-type (powder actuated) fastening devices which are stressed in withdrawal, on any part of this work. Only low velocity plunger-type devices are permitted. All methods of installing fasteners must be approved by the Consultant.
 - 1.18. DAMAGE RESPONSIBILITY**
 - .1 The Contractor must be responsible for and make allowance for any damage or debris his work has caused and must initiate and pay for any clean-up work required to return the building or any other associated areas to an 'as was' condition.
 - .2 The Contractor will be responsible to repair any damage to the building components caused by his work.
 - 1.19. DISPOSAL**
 - .1 Waste Management Disposal Company must be approved and licensed by the Ministry of Environment for transportation and disposal of all site and construction related materials.
 - .2 Transportation of all materials must meet Ministry of Environment guidelines.
 - .3 Contractors are required to submit copies of all Bills of Lading from disposal facilities and transfer stations to the Consultant as proof of compliance.

END OF TEMPORARY FACILITIES

**SIMCOE COUNTY DISTRICT SCHOOL BOARD
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PROJECT NO. 12464T

PRODUCTS AND WORKMANSHIP

Section 01600

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PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. WORKMANSHIP

- .1 All work performed on the Owner property 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, unless special methods or performance standards are specified or given in writing by the Owner or Consultant.
- .2 Without affecting the requirements as outlined above, the work shall be carried to completion as expeditiously as possible.
- .3 Where not otherwise specified or shown, all work must conform to the local governing codes and by-laws and to the Ontario and National Building Codes. All codes, standards, regulations and by-laws shall be of the latest date or amendment prior to tender issue.
- .4 Any work not acceptable to the Owner or Consultant or local authorities shall be removed and replaced when and as directed by them. The cost of re-executing such work shall be borne by the Contractor.

1.3. SCHEDULING

- .1 The Contractor shall take all possible steps to minimize interference with school operations and schedule their work, etc., in such a manner as to accomplish this end.
- .2 Schools are normally open for a Contractor to perform work during weekdays. These hours should be confirmed with the Owner prior to completing any work schedule. Weekend work can be arranged where the Contractor is prepared to pay for custodial coverage at the applicable overtime rates.
- .3 The Contractor shall provide the Owner with a complete plan or layout of their work schedule prior to commencing any work on Owner property. All work scheduled shall be approved by the Plant Services Department.
- .4 The Contractor must report to the school office before proceeding elsewhere on Owner property.

1.4. CUTTING AND PATCHING

- .1 **Cutting and patching is the responsibility of the trade requiring the opening.** The drawings do not attempt to indicate all the openings required to execute the work. Trades are responsible to provide **all** openings, in new or existing construction, required to complete their work.
- .2 Execute cutting neatly and carefully, no larger than necessary, employing workers skilled in the erection of the part of the Work being cut.
- .3 Patch parts of the Work to match adjacent construction and finishes unless otherwise specified or indicated on Drawings.
 - .1 Provide patching products equal to existing finishes
 - .2 Join new work to existing in neat, accurate manner
 - .3 Provide soundproof interior junctions.
- .4 Prior to cutting and drilling through concrete, structural masonry and steel and load bearing members, including floors, ceilings, columns, beams and walls, obtain Consultant's written acceptance.

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- .1 X-ray all reinforced concrete slabs to identify location of reinforcing where new penetrations are required. Plan and execute openings to avoid cutting reinforcing and as directed by Consultant.
 - .2 Design and provide permanent and temporary reinforcement and supports, as required to complete the work or as directed by the Consultant.
 - .5 Maintain fire separations and provide fire and smoke penetration sealants in conformance with Section 07270 in cut and patched parts of the Work.
 - .6 Unless otherwise indicated, run piping, ducts and conduit in ceiling and furred spaces and bury conduit in walls.
 - .7 Saw-cut floors, walls and ceilings accurately. Provide holes and openings no larger than necessary to minimize damage. Core drill circular holes in concrete. Accurately cut new openings for electrical outlets and other recessed items in walls.
 - .8 After cutting and patching is complete, re-finish surfaces to minimum 100mm outside the patch perimeter. Match patch finish to existing adjacent surfaces to completely conceal the patch. Where surfaces are painted, **paint entire surface associated with cutting and patching to nearest break in wall surfaces such as inside and outside corners.**
 - 1.5. MECHANICAL AND ELECTRICAL LOCATION DRAWINGS**
 - .1 Mechanical and electrical drawings indicate approximate locations diagrammatically. Prior to installation, request and obtain final location and arrangement drawings for mechanical and electrical items. Allow the Consultant to adjust final locations within 5'-0" radius from the diagrammatic position indicated, without change to the Contract Price.
 - .2 Align and cluster devices and fitments neatly in accordance with specified mounting heights.
 - 1.6. BUILT-IN ITEMS**
 - .1 Provide and coordinate the location of chases, slots and reglets including frames, sleeves, inserts, anchors, fasteners and bolts, forms and templates.
 - 1.7. ANCHORS AND FASTENERS**
 - .1 Do not use materials subject to electrolytic action and corrosion where conditions will be liable to cause such action.
 - 1.8. TRADEMARKS AND LABELS**
 - .1 Do not expose trademarks and labels, including applied labels in the finished Work. Remove visible trademarks and labels except those, which are essential to obtain identification of mechanical and electrical equipment for maintenance and replacement purposes and for mandatory fire ratings.
 - 1.9. PRODUCT DELIVERY, STORAGE AND HANDLING**
 - .1 Package, crate and brace products to prevent damage during delivery, storage and handling.
 - .2 Provide protection to finished surfaces to prevent damage during delivery, storage and handling.
 - .3 Store packaged materials in original undamaged condition with manufacturer's labels and seals intact.
 - .4 Handle and store materials in accordance with manufacturer's and supplier's recommendations in protected location.
 - .5 Replace products damaged during delivery to the Place of the Work, storage, handling and installation.
 - 1.10. CONCEALMENT OF SERVICES**
 - .1 Conceal pipes, service lines, wiring, conduit and ducts in purpose-built masonry chases in existing and new walls, behind furring or above ceilings except where they are specifically indicated as being exposed to view. Where no existing or new ceiling is provided, such items may be exposed at the ceiling level.

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END OF PRODUCTS AND WORKMANSHIP

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CONTRACT CLOSEOUT AND FINAL CLEANING

Section 01700

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PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.
 - .4 OAA/OGCA Take-over Procedures, OAA/OGCA Document No. 100.

1.2. ABOVE CEILING REVIEW

- .1 Prior to installation of gypsum board ceilings and placing of acoustical ceiling tiles (except tiles with sprinkler heads, detectors and other fixtures) advise Consultant that above ceiling work is complete and ready for review. Provide 48 hour notice of readiness to the Board. Provide 72 hour notice for any cancellation or changes; failure to do so may result in a back charge to the Contractor for costs of Owner's personnel.
- .2 Owner, Consultant and sub consultants will conduct above ceiling review and prepare list of deficiencies.
- .3 Contractor shall correct deficiencies and advise Consultant when all deficiencies have been corrected.
- .4 Gypsum board ceilings and acoustical ceiling tiles may not be installed before Consultant has verified that all above ceiling deficiencies have been corrected.

1.3. TAKE OVER PROCEDURE

- .1 Generally, at the completion of the Work arrange for, conduct and document final inspection, closeout and take-over in accordance with the process as described in the OAA/OGCA Document No. 100 "Take-over Procedures" and Supplementary Condition of CCDC #2 G.C. 5.4.
- .2 Contractor's Inspection: The Contractor and his Sub-Contractors shall conduct an inspection of the Work, and correct all deficiencies. **Contractor is to provide a written list of deficiencies to the Consultant.**
- .3 Consultant's Inspection: The Contractor shall notify the Consultant in writing of satisfactory completion of the "Contractor's Inspection" and request a "Consultant's Inspection" for Substantial Performance. The Architect, Consulting Engineers, the Contractor and the Owner shall be present for the "Consultant's Inspection". Consultant's Inspection for Substantial Performance will not be scheduled until above ceilings are 100% deficiency free.
- .4 Deficiencies: During the "Consultant's Inspection" a list of all deficiencies shall be drawn up by the Architect and his Consultants. The Contractor shall correct all deficiencies in a satisfactory manner. Deficient work will be valued at 200% of "normal" costs as determined by the Architect and an amount retained on that basis until all deficiencies have been corrected and accepted by the Consultant subsequent to Final Inspection.
- .5 When the Contractor is satisfied that all deficiencies noted by the Architect have been corrected, the Contractor shall request, in writing, a "Final Inspection". The final inspection team shall consist of the Owner, Architect, Contractor and Engineers if required.
- .6 Declaration of Completion: When it is mutually agreed by the Final Inspection team that the work is substantially performed, the Contractor shall issue, in writing, a declaration to the Owner that:
 - .1 "All work in respect to the Contract for (Name of Project) has been completed as of (day month year) and no further work is required except for repairs or replacements as are outlined within this declaration of completion".
- .7 Certificate of Substantial Performance: The Architect will state in writing, upon agreement with the above declaration, his approval of the inspected work, as "Substantially Performed".

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- .8 Commencement of Lien and Guarantee Periods: The date of the publication of the Substantial Performance Certificate obtained by the Contractor shall mean immediate commencement of the lien period as specified by Provincial lien laws and the commencement of Guarantee periods.

1.4. RECORD DRAWINGS AND SPECIFICATIONS

- .1 Upon completion of Work and ten (10) days prior to requesting Substantial Performance, arrange, pay for and submit to the Consultant one (1) complete set of legibly marked up site record Drawings.
- .2 Submit Record Drawings conforming to the following requirements:
 - .1 Each as-built deviation/change from the Contract Documents recorded including information, specifications, drawings, instructions and details contained in Site Instructions, Change Orders and Cash Allowance Authorizations. Reference only to SI, CO and CAA numbers is not acceptable.
 - .2 Changes must be easily legible and are subject to the Consultant's acceptance.
 - .3 Changes located by outline clouding and referenced to title revisions column.
- .3 The Consultants will draft the record drawings paid for by Cash Allowance.
- .4 Submit one set of notated specifications indicating as built changes to the Contract Documents.
- .5 Refer to Divisions 15 and 16 for supplementary requirements.

1.5. MAINTENANCE AND OPERATING INSTRUCTIONS MANUAL

- .1 On completion of the Work and ten (10) days prior to requesting Substantial Performance, submit 1 hardcopy set and 1 digital set of the maintenance and operating instructions manual to the Consultant.
 - .1 Hardcopy set to be bound in three-ring, hard covered. vinyl jacketed binders and label the spine "MAINTENANCE AND OPERATING INSTRUCTIONS MANUAL"
 - .2 Digital set to be submitted on a single removable USB flash drive.
- .2 Organize contents into applicable categories of the Work numbered to match the Specification Section numbering system.
- .3 Include the following:
 - .1 Title sheet, labeled "Operating and Maintenance Instructions" containing project name and completion dated.
 - .2 List of contents.
 - .3 List of names, addresses and phone numbers of installing Subcontractors and suppliers for future repair or maintenance.
 - .4 Schedule of Finishes (as-built) listing paints, colours and fabrics provided.
 - .5 Each section organized by specification section numbering system to have the following as applicable:
 - .1 A complete set of reviewed shop drawings, hardcopies to be folded to 8 ½" x 11" size and contained in heavy duty manila envelopes, numbered and labeled. Follow specification format with no more than one (1) Section per envelope.
 - .2 Data books and literature,
 - .3 Maintenance instructions specifying warnings of any maintenance practice that may damage or disfigure the specified products,
 - .4 Operational information on products, cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information,
 - .5 Recommended maintenance products,
 - .6 Extended warranties.
- .4 Submit instructions in simple language so as to guide the Owner in the proper operation and maintenance of building components.
- .5 Refer to Divisions 15 and 16 for supplementary requirements.

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1.6. MISCELLANEOUS CLOSEOUT SUBMITTALS

- .1 In addition to Items 1.4 and 1.5, Supplementary Condition of CCDC #2 G.C. 5.4 and ten (10) days prior to requesting Substantial Performance, submit the following to the Owner with a copy to the Consultant:
 - .1 Hydro certificates
 - .2 Fire Alarm verification report
 - .3 Testing, adjusting and balancing reports
- .2 Refer to Section 00810, GC 5.8.2 regarding a reserve fund that will not be paid until all items in the Miscellaneous Close-out Submittals List have been provided to the Owner's satisfaction. Note that this reserve is in addition to the statutory holdback.

1.7. TOTAL PERFORMANCE

- .1 Final payment will not be considered until after the 45 day lien period is completed.
- .2 Prior to requesting a final inspection do the following:
 - .1 Submit a final request for payment incorporating all approved changes to the Contract Price, including adjustments to the Cash Allowances listed in Section 01020.
 - .2 Ensure completion of all deficiencies, clean all areas, surfaces and components affected by the Work.
 - .3 Ensure that all services, equipment, apparatus are properly tested, adjusted, balanced and fully operational.
 - .4 Provide a written statement that items .2 and .3 above have been completed.
- .3 After all deficiencies have been corrected, submit to the Consultant a written request for a final inspection containing a statement that deficiencies have been corrected and that the project is ready for final inspection. This inspection shall be carried out by the same parties involved in the Substantial Performance deficiency inspection.
- .4 If all deficiencies have not been corrected in the opinion of the Consultant, a final deficiency list shall be prepared by the Contractor in the same manner as specified herein for the Substantial Performance deficiency inspection and the inspection procedure repeated until all items have been completed to the satisfaction of the Consultant.
- .5 The Consultant will conduct one Final Performance inspection and a maximum one follow-up inspection. Subsequent inspections due to the Contractor's failure to complete the work shall be paid for by the Contractor at current OAA per diem rates. The Owner will deduct said expenses from the Contractor's payment.
- .6 Failure of the Contractor to correct the listed deficiencies within the 45 day lien period will result in direct action being taken by the Owner to correct the deficiencies outside of the Contract.
- .7 On the 45th day of the lien period final inspection shall be made to ascertain the Contractor's progress with deficiencies and to invoke the above clause should it be required.

1.8. 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 General: All surfaces within the scope of work are to be cleaned.
 - .1 Floors :

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- .1 Floors are to be swept, and mopped clean with a neutral detergent. Floor sealers, as per specifications, are to be used on new terrazzo only. Under no circumstances are new floors to be waxed.
- .2 Completed areas are to be thoroughly vacuumed prior to handover to Owner.
- .3 Countertops and Millwork:
 - .4 Remove all adhesives as recommended by the finish material manufacturer.
 - .5 Vacuum and wipe clean with a non-abrasive damp cloth.
- .2 Walls:
 - .1 Wipe clean with a non-abrasive damp cloth.
- .3 Light Fixtures and Other Devices:
 - .1 The contractor is to ensure that all light fixtures and other devices are to be left in a clean, pristine condition.
- .4 Chalkboards:
 - .1 All new chalkboards are to be chalked in; this chalk will remain on the boards and will be removed by Board Custodial Staff.
- .5 Windows and Glazing:
 - .1 All windows are to have all markings, over spray, etc. removed and scraped clean. All glazed surfaces are to be cleaned with a suitable product and left streak free. All window and door frameworks are to be wiped clean with a non-abrasive damp cloth.
- .6 Ceramic/Porcelain Tile – Walls:
 - .1 Wipe clean with a non-abrasive damp cloth.
- .7 Ceramic/Porcelain Tile – Floors:
 - .1 Ceramic or porcelain tile is to be scrubbed so that all dirt, debris, stains and marks are removed. Grout is to be sealed.
- .8 All other surfaces, fixtures and equipment
 - .1 Wipe clean with a non-abrasive damp cloth.
- .9 Washrooms, Bathrooms, Shower and Drying Areas
 - .1 Remove all adhesives, grouts, etc. as recommended by the finish material manufacturer.
 - .2 All floors are to be swept, and mopped clean with a neutral detergent.
 - .3 All walls are to be wiped clean with a non-abrasive damp cloth.
 - .4 All fixtures are to be wiped clean with a non-abrasive damp cloth.
 - .5 All mirrors are to have all markings, over spray, etc. removed and scraped clean and cleaned with a suitable product and left streak free. Remove all protective plastic coverings.
- .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 to satisfaction of Consultant.
- .13 Maintain cleaning until Owner has taken possession of Work.

END OF CONTRACT CLOSEOUT AND FINAL CLEANING

PART 1: GENERAL

1.1. GENERAL INSTRUCTIONS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. EXTENDED WARRANTIES AND GUARANTEES

- .1 The Contractor is the warrantor and the guarantor for the parts of the Work requiring extended warranties and guarantees. If subcontractors or suppliers have provided parts of the Work, submit their supporting warranties and guarantees in accordance with the requirements of this Section.
- .2 Extended warranties and guarantees include labour and materials for removal, repair and replacement of both products provided as part of the Work of the applicable Section and adjacent damaged products.
- .3 Extended warranty and guaranty durations (in years) are identified in each Section and are deemed to commence on the date of Substantial Performance of the Work.

1.3. SUPPORTING WARRANTIES AND GUARANTEES

- .1 Submit each supporting warranty and guarantee as follows:
 - .1 identifying the sub-contractor as warrantor/guarantor.
 - .2 issued in both the Contractor's and the Owner's name
 - .3 including labour and materials for removal, repair and replacement of products provided as part of the Work of the applicable Section and adjacent damaged products.
 - .4 for periods of years identified in each Section and commencing on the date of Substantial Performance of the Work.
- .2 Submit supporting warranties and guarantees as per Section 01700, within 14 Days after Substantial Performance of the Work.

1.4. LIST OF EXTENDED WARRANTIES

- .1 The following list of extended warranties is shown here for convenience only. All must be supplied whether listed below or not. Refer to Divisions 2 to 16 inclusive for requirements.
 - .1 Sealants Section 07900 2 years
 - .2 Aluminium Windows and Entrances Section 08520 10 years
 - .3 Door Hardware Section 08710 3 years
- .2 Refer to Divisions 15 and 16 for mechanical and electrical extended warranty requirements.

END OF EXTENDED WARRANTIES AND GUARANTEES

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS:

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. DESCRIPTION

- .1 Related Work Specified Elsewhere:
 - .1 Disconnection, sealing off, demolition & alterations to existing mech/elect services & equipment - Divisions 15 & 16.
- .2 Scope of Work:
 - .1 Contractor shall demolish & remove all structures, foundations, walls, floors, doors, frames, floor finishes, suspended ceilings, etc shown dashed / noted on drawing or as referenced in the Room Finish Schedules in specification **or as required to complete the work**. Refer to Part 2 of this Section for directions regarding items removed by Owner, items or materials resulting from demolition, etc.
 - .2 Prepare existing floor substrate as specified herein.
 - .3 Visit site at time of tender to determine & include for full extent of demolition & removal work involved.

1.3. REQUIREMENTS OF REGULATORY AGENCIES

- .1 Conform to 2017 OBC, municipal by-laws & all other requirements of utility or provincial authorities having jurisdiction. Submit all required documentation, gain all authority approvals, obtain & pay cost of separate demolition permits if such are required, pay all fees, inspection charges, disconnect charges, etc related to performing of demolition & removal work.
- .2 Put in place all safety measures such as hoarding, signage, garbage bins, etc & perform all temporary disconnect/capping-off work for existing services as required by Owner, Municipality & Provincial or Utility authorities having jurisdiction. Include all costs for erection & removal of such protective devices. Remove such devices immediately upon completion of demolition & removal work.
- .3 Configure & schedule work such that all required fire exits for existing building are maintained throughout course of demolition & removal work.

1.4. QUALITY ASSURANCE

- .1 Demolition & removal work shall be performed by skilled experienced personnel working for qualified demolition subcontractor with appropriate insurance coverage to perform described. Firms submitting tenders shall be actively engaged in work of this type & shall show proof of such experience if requested.
- .2 Demolition subcontractor shall appoint knowledgeable experienced job foreman who shall be on site full during demolition & removal work. Job foreman shall remain on site until all deficiencies are corrected & all clean-up work is performed to consultant's satisfaction.
- .3 Demolition & removal work shall be performed with utmost care to prevent damage to adjacent equipment/materials /finishes to be maintained or to items being removed & turned over to Owner or relocated. Make good, at no additional cost to Owner, any damage caused by failure to exercise care & protection.
- .4 Provide all measures required to ensure that areas being demolished are left secure after normal working hours.

1.5. INTERRUPTION OF EXISTING SERVICES

- .1 Prior to commencement of any demolition & removal work, determine with care location & nature of existing mech/elect services within demolition work areas. Verify position of such

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items with Owner, local utilities, etc. Disconnection, capping-off demolition & alterations to existing mech/elect service & equipment shall be performed by properly qualified & experienced mech/elect subcontractors. Coordinate with mech/elect subcontractors & with Owners representatives to ensure proper scheduling of all necessary disconnects to allow demolition work to proceed yet permit Owner to continue his use of adjacent portions of building. Interruption of existing services necessary to Owners continued functions shall only be permitted when sufficient advance warning has been given to Owner that he can make alternative arrangements. Existing services shall be interrupted for shortest possible length of time each occurrence.

1.6. PROTECTION

- .1 This Subcontractor shall be responsible for protection of existing building assemblies /equipment /materials/finishes to be maintained so that they are not damaged by his demolition & removal work.
- .2 Provide temporary dust-proofing by means of partitions, filters, coverings, flexible screenings & tape to effectively isolate existing material/finishes /equipment. Such measures shall be in place prior to commencement of any demolition work. Openings in existing floors, walls & ceilings shall be covered & taped to prevent dust migration. Existing return air grilles leading from areas being demolished shall be equipped with temporary filters & cleaned or replaced on regular basis. Include all costs for erection & removal such protective devices. Remove such devices immediately upon completion of demolition work.
- .3 Where demolition results in a portion of the existing building being exposed to the exterior, provide temporary, weather-tight, insulated hoarding partition sufficient to prevent infiltration of exterior elements into the building.
- .4 Prevent damage of structures, services, walks, paving, trees, landscaping and adjacent grades. Make good damage caused by demolition work.
- .5 Prevent debris from blocking roof drainage systems, and mechanical and electrical systems which MUST remain.
- .6 Contractor will be responsible for cleaning any areas beyond the area of Work where dust or debris from the demolition has accumulated and will be responsible for the cost of replacing any equipment or material damaged due to inadequate dust barrier protection.
- .7 Rubbish & waste materials resulting from demolition work may be left on site overnight only if stored in steel garbage container of appropriate size with spring loaded lockable closure doors. Position container to Owner's approval & remove or empty same on regular basis to prevent overfilling. Pay all costs related to rental of container & transportation to dump or authorized landfill site. Pay actual dumping charges at dump or authorized landfill site.

PART 2: PRODUCTS

2.1. ITEMS TO BE REMOVED/RELOCATED BY OWNER (NIC)

- .1 Owner, using his own personnel, may remove & relocate following existing materials or equipment:
 - .1 all loose furniture & equipment such as tables, desks, chairs, files, photocopiers, stored paper supplies, books, etc.
 - .2 all audio/visual equipment such as overhead projectors, projection screens, computers, etc.
- .2 There may be some overlap between Owner's removal & relocation work & commencement of work of this contract. Successful Contractor shall be expected to cooperate fully with Owner if such overlap occurs.

2.2. ITEMS OR MATERIALS RESULTING FROM DEMOLITION

- .1 Except for items noted on the Drawings, all other materials & equipment removed by this Section shall become property of this Subcontractor who shall become responsible for removing them completely from site.

- .2 Prior to commencement of demolition work however, this Subcontractor shall submit to Owner complete written list of materials & /or equipment to be removed from demolition work areas. Owner shall have right to request, in addition to items indicated above, that additional items on this list be turned over to him for his use. Owner shall reply in writing in this regard. Owner recognizes that adjustments to Tender Price may be sought by Subcontractor for such added requests.
- .3 Items noted to be turned over to the Owner are to be delivered to the Owner at 1170 Highway No. 26, Midhurst, ON by the Contractor.

PART 3: EXECUTION

3.1. GENERAL PROCEDURES

- .1 Select methods of demolition to result in minimum of noise & dust. Dampen surfaces as required during course of demolition to result in minimum of noise & dust generation.
- .2 Restrict traffic in area of demolition work to minimize safety hazards. Clean up on regular basis throughout day to ensure that tracking of dust & staining or blemishing of existing adjacent finishes which are to be maintained does not occur.
- .3 Prevent unplanned movement, settlement, or damage during demolition operations. Provide bracing & shoring required. Carefully remove & lower heavy or large objects.

3.2. PREPARATION OF EXISTING FLOOR SUBSTRATE

- .1 At areas where existing floor finish materials are to be removed thereby exposing existing concrete substrate, this Subcontractor shall be responsible for cleaning & preparing existing concrete substrate ready for application of new floor finish materials.
- .2 Include all costs for labour, solvents, acids, pneumatic scalers, grinders, scarifier, etc as required to completely remove residual adhesive left on concrete substrate (after removal of existing floor finish materials) such that new floor finish materials can be successfully applied. Coordinate with other trades to ensure that solvents used in preparation work are compatible with adhesives to be used in applying new floor finish materials.

3.3. CLEAN -UP

- .1 Clean up in accordance with Section 01000, General Instructions.
- .2 Dispose of the removed material from the site promptly.
- .3 Waste Management Disposal Company must be approved and licensed by the Ministry of Environment for transportation and disposal of all site and construction related materials.
- .4 Transportation and disposal of all materials must meet Ministry of Environment guidelines.
- .5 Contractors are required to submit copies of all Bills of Lading from disposal facilities and transfer stations to the Consultant as proof of compliance.

3.4. HAZARDOUS MATERIALS

- .1 Comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials in accordance with Section 01060 – Regulatory Requirements.

END OF DEMOLITION & REMOVAL

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PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. SCOPE OF WORK

- .1 Furnish all labour, materials, and equipment necessary to supply and install concrete block masonry units, mortar, and accessories as indicated on drawings and specified herein.
- .2 Furnish all labour, materials, and equipment necessary to install brick masonry units, loose steel lintels, anchors, and other built-ins as supplied by others, as indicated on drawings and specified herein.
- .3 Furnish all labour, materials, and equipment necessary to complete remedial work to existing and new masonry junctions.
- .4 Furnish all labour, materials and equipment necessary to install all hollow metal frames in masonry partitions. Frames and anchors to be supplied by Section 08100.

1.3. RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 01400: Quality Control
- .2 Section 03200: Concrete Reinforcement
- .3 Section 03300: Cast-In-Place Concrete
- .4 Section 05120: Structural Steel
- .5 Section 05500: Miscellaneous Metal Work
- .6 Section 07200: Insulation
- .7 Section 07265: Vapour and Air Retarders
- .8 Section 07510: Built-up Bituminous Roofing
- .9 Section 07900: Caulking
- .10 Section 08100: Hollow Metal Doors and Frames
- .11 Section 09250: Gypsum Board
- .12 Section 09900: Painting
- .13 Division 15: Mechanical Items to be built into masonry
- .14 Division 16: Electrical Items to be built into masonry

1.4. QUALITY ASSURANCE

- .1 Requirements of Regulatory Agencies: Conform to 2017 Ontario Building Code.
- .2 Source Quality Control: Concrete block shall conform to CAN3-A165 Series-94 (R2000), Standards on Concrete Masonry Units. Concrete block shall be tested in accordance with ASTM C140-11, Standard Methods of Sampling & Testing Concrete Masonry Units. All of each type of masonry unit shall come from one manufacturing facility and shall be of same production run.
- .3 Supervision: Work of this section shall be executed under continuous supervision and direction of competent foreman for each class of work. One thoroughly experienced, reliable and competent man shall be in charge of all mortar work.
- .4 Testing & Inspection: Materials and installation shall be subject to approval by independent testing and inspection company appointed and paid for by Owner. Provide representative samples of materials required by testing and inspection company at no added cost to Owner.

1.5. REFERENCES

- .1 The following reference standards and criteria to serve as **minimum** guidelines for materials and execution of all masonry work covered by this section.

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|-----|--------------------------|---|
| .1 | CAN/CSA-S304-14: | Design of Masonry Structures |
| .2 | CAN/CSA-A371-04 (R2014): | Masonry Construction for Buildings |
| .3 | CAN/CSA-A165 SERIES-14: | Concrete Masonry Units |
| .4 | CAN/CSA A179-04 (R2014): | Mortar and Grout for Unit Masonry |
| .5 | CAN/CSA-A370-14: | Connectors for Masonry |
| .6 | CAN/CSA-A82-14: | Fired masonry brick made from clay or shale |
| .7 | ASTM Standard C90: | Standard Specification for Loadbearing Concrete Masonry Units |
| .8 | ASTM Standard C129: | Standard Specification for Non-Loadbearing Concrete Masonry Units |
| .9 | ASTM Standard C140: | Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units |
| .10 | ASTM Standard C216: | Standard Specification for Facing Brick |

1.6. SUBMITTALS

- .1 Submit full size samples of each masonry unit specified, 50mm x 50mm cube of coloured mortar, and accessories as requested by the Consultant.
- .2 Obtain Consultant's approval of samples and supplier prior to constructing mock-up panels. Mock-up panels to be 1200mm x 1800mm and 3 panels are to be constructed. Maintain panel approved by Consultant in protected manner throughout course of masonry work.
- .3 Submit samples of all masonry ties and reinforcing for Consultant's approval prior to installation.

1.7. DELIVERY, STORAGE AND HANDLING

- .1 Masonry units, sand and accessories to be delivered to site in dry condition and stored on wooden platforms. Cover entirely with weatherproof covering during inclement weather or when masonry work is not in progress. Keep sand dry and free from inclusion of foreign matter.
- .2 Avoid overloading structure and do not concentrate stored material on floors and roof.
- .3 Cement, admix and other packaged materials to be delivered in original, unbroken and undamaged packages with manufacturer's labels intact. Store in weather tight sheds until use on projects.
- .4 Handling and storage of material to be in such a manner that the material at the time of incorporating into the building is in first class condition unharmed by weather or physical injury. Any units stained or chipped or materials affected by inadequate storage to be replaced at no cost to Owner.

1.8. PROJECT CONDITIONS

- .1 Construct no masonry work during rain, snow, sleet or freezing weather unless the work and scaffolding is adequately contained within weatherproof enclosures.
- .2 During the winter months, maintain all masonry materials free from the accumulations of ice and frost. Until completed and protected by flashings or other permanent construction, keep masonry protected using waterproof, non-staining coverings that extend over walls and down sides sufficiently to protect walls and cavities from filling with snow.
- .3 At temperature above -5°C and below 5°C, provide adequate equipment for heating mortar materials. Water temperature not to exceed 60°C. Mortar temperature to be between 10°C and 32°C. Masonry units to be free from ice but need not be heated.
- .4 At temperatures below -5°C, the masonry units to be protected and heated to a temperature between 10°C and 38°C to remove frost and moisture.
- .5 Maintain air temperature at 5°C on both sides of completed masonry work for a period of minimum 72 hours by enclosure, artificial smokeless heaters or other approved methods until concrete filled voids are free of moisture.
- .6 Do not use scorched sand, salts, antifreezes, or air entraining agents for masonry work.

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- .7 During the summer months, protect freshly laid masonry from drying too rapidly by means of waterproof, non-staining coverings.
- .8 Until completed and protected by flashings or other permanent construction, keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficiently to protect walls from wind driven rain.
- .9 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings.
- .10 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

1.9. CO-ORDINATION

- .1 **Co-ordinate and co-operate with all other trades on the project to locate and build all enclosures, chases, slots and reglets.** Build-in all frames, sleeves, anchor, bolts, electrical items and mechanical items as required to eliminate cutting of masonry surfaces after completion of the work, to enclose services from view in finished spaces, and in order to produce a first class job.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Concrete Block:
 - .1 Block to be metric modular sized with uniform texture and colour, conforming to CAN3-A165 Series -14. Load bearing shall comply with ASTM C90-16. Non-load bearing units shall comply with ASTM C129-16. All block shall have moisture content, face shell and web thicknesses, compressive strength & water absorption in accordance with ASTM C140-16.
 - .2 All masonry block for foundation walls to be dense aggregate block, all other block to be lightweight haydite or slag aggregate block.
 - .3 Use bullnose edged block, corner blocks, ashlar block, lintel block and any other special block configurations as indicated on drawings.
- .2 Concrete Brick:
 - .1 All concrete bricks to be Type II concealed masonry units, 70mm x 210mm x 100mm deep, uncoloured, 100% solid and smooth faced. Use as miscellaneous filler pieces and in conjunction with cut block at beam or joist pockets.
- .3 Clay Face Brick:
 - .1 Brick shall be, Grade SW, to meet specification of CAN/CSA-A82-06, size to match existing (modular).
 - .1 Colour and texture to provide exact match for existing brick (samples to be approved by Consultant prior to ordering).
 - .2 Where an exact colour match cannot be obtained to the satisfaction of the Consultant, provide masonry staining on new face masonry units of identical size and texture to render new face masonry indistinguishable from existing.
 - .2 Stockpile brick required for entire Project from same burning before work commences to ensure uniform colour and range for each selection.
 - .3 Exposed ends of the brick units shall have a surface of the same texture and colour as the face surfaces.
- .4 Mortar Materials: Shall conform to CSA A179-14 and as follows:
 - .1 Fine aggregate to CSA A179-14
 - .2 Water used in mortar shall be clean and free of deleterious substances.
 - .3 Portland Cement shall conform to CAN/CSA-A5 (latest edition).
 - .4 Type M Mortar, 17.5 MPa (2500 psi) (28 day), shall be used below grade.
 - .5 Type S Mortar, 12.5 MPa (1800 psi) (28-day), shall be used above grade.

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- .6 Colouring for mortar joints in all exterior masonry work shall be up to maximum of 1.4 kg (3 lb) of Northern Pigment colouring to each bag of pre-mixed Type S mortar. Mix to Consultant's direction, carefully recording exact amount of colouring used in each mix and incorporate into sample panels for approval.
 - .5 Masonry Reinforcement & Ties:
 - .1 Masonry Cavity Walls - Composite:
 - .1 Joint reinforcing to be Blok-Lok BL10, Wire-bond Series 200 or Dur-O-Wall D/A 320 Ladder, 2 wire, 3.66 mm diameter, mill galvanized. Reinforcing shall occur every second course.
 - .2 Fero Block Shear Connector or Blok-lok BL-507 Cavity wall anchoring system, 16 gauge, hot dipped galvanized, with 4.76 mm diameter V-ties, hot dip galvanized and length to provide placement of V-tie legs at centreline of veneer.
 - .3 The length of block shear connection shall provide anchorage at both the inner and outer face shell of the masonry unit.
 - .4 Provide block shear ties at 800 mm horizontal and 600 mm vertical spacing, at 300 mm maximum spacing around openings and/or as noted on the Drawings.
 - .2 Single Wythe, Interior Masonry Walls:
 - .1 Joint reinforcing to be Blok-Lok BL10, Wire-bond Series 200 or Dur-O-Wall D/A 320 Ladder, 2 wire, 3.66 mm diameter, mill galvanized. Reinforcing shall occur every second course.
 - .3 Steel reinforcement, anchors, accessories, etc. for masonry walls shall conform to requirements of CSA G30-90.
 - .6 Non-Shrink Grout:
 - .1 "Embeco Pre-Mixed Grout" by Master Builders, "Tartan Grout" by Webseter, or "Ferrogout" by Sternson.
 - .7 Damp Course, Through-Wall Flashing and Flexible Membrane Flashings:
 - .1 To be Lexcan "F-20" Membrane by Lexcor, "ExoAir TWF" membrane by Tremco, "Perm-A-Barrier" wall flashing by Grace Construction Products, "AquaBarrier TWF" by IKO.
 - .8 Pre-finished Metal Drip Flashing:
 - .1 To be 0.61mm zinc galvanized or aluminum-zinc galvanized steel with 5000 series factory applied colour coating, colour to be selected by Consultant.
 - .9 Cavity Wall Ventilators:
 - .1 Shall be PVC Weephole Ventilators (brick type, approx. 60mm high), Blok-Lok, Wire-Bond, Dur-O-Wall or approved equal. Place at 800mm o/c at top and bottom of all exterior cavity walls, at heads of openings in exterior cavity walls and elsewhere as indicated on wall section details.
 - .10 Mortar Dropping Control Device:
 - .1 Shall be 25mm "Mortar Maze" by Advanced Building Products, Cavity Net by Wire-Bond or approved equal.
 - .11 Weep Holes:
 - .1 Shall be Blok-Lok "BL-D" , cadmium plated weepers, Louvered Weep Holes by Wire-Bond, or approved equal. Place at 800mm o/c in bottom course of all exterior walls, at heads of openings in exterior walls and elsewhere as indicated on wall section details.
 - .12 Control Joints:
 - .1 To be 10mm closed cell polyvinyl chloride foam such as Type S Sealtight Rescor Expansion Joint Filler by W. R. Meadows of Canada Ltd. or 10mm fibreboard (asphalt impregnated) or closed cell neoprene foam such as #3300 Expansion Joint by Wire-Bond.
 - .13 Packing Insulation:

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- .1 To be loose, rock wool fibre.
- .14 Cleaning detergent:
 - .1 "Sure Klean #600" by Prosoco, "202 new Masonry Detergent" by Dietrich Technologies, "USM Masonry Cleaner" by US Mix Products.

PART 3: EXECUTION

3.1. INSPECTION

- .1 Prior to commencing work of this section, carefully inspect and ensure that steel and concrete surfaces are ready to receive masonry and that there are no protuberances or sharp edges which may tear or puncture the membrane flashing.
- .2 All defects of previously installed work to be reported to Consultant and rectified prior to starting masonry work.

3.2. PREPARATION

- .1 The Contractor to prepare and co-ordinate all aspects of masonry work to ensure efficient and satisfactory installation with minimal delays.
- .2 Supply and erect all scaffolding required for the proper completion of the masonry work. Scaffolding to be supported from the floor, rigidly built and firmly braced. Do not attach to or brace against any portion of the building. Scaffolding to comply with all Federal and Provincial Safety Regulations.
- .3 All equipment for mixing and transporting the mortar and masonry units to be clean and free from set mortar, dust, or other foreign matter.
- .4 Layout coursing and bonding to achieve correct coursing heights and continuity of bonding above and below openings to minimize cutting.
- .5 Layout exposed masonry of varying colours, tones and textures in order to produce a homogeneous blend when placing units.

3.3. INSTALLATION – GENERAL:

- .1 Install masonry work plumb, level, and true to line, with vertical and horizontal joints in uniform thicknesses and alignment. **Masonry to be laid with maximum variation from a straight line of 3mm in 2400mm in any direction, including horizontal joints and vertically aligned joints. All mortar joints to be uniform 10mm thick.**
- .2 Exposed masonry faces to be free from stains, chips, and cracks. Damaged or unsatisfactory units to be removed and replaced to Consultant approval. **Patching of damaged units shall not be acceptable.**
- .3 All masonry units to be laid in running 1/3 bond unless otherwise indicated on drawings. All external corners at interior walls to receive bull-nosed block except at base course.
- .4 Lay masonry in full mortar beds. Both faces of masonry to be mortared solid. Remove excess mortar and avoid smears on masonry.
- .5 Extend all walls tight to underside of structural deck above unless specifically noted otherwise.
- .6 All exposed joints to be tooled concaved unless otherwise noted. Allow joints to set just enough to remove excess water, then tool with a non-staining jointer to provide smooth, compressed, and uniformly concaved joints.
- .7 Where raked joints are indicated, use a square, non-staining jointer to provide smooth, compressed, uniform joints that are 6mm depressed from face.
- .8 All concealed joints to be struck flush.
- .9 All walls to be erected in a uniform manner. Lay no more than 1600mm in vertical height in any one working day. Raise no section of masonry work more than 600mm above adjoining sections at anytime.

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- .10 No masonry unit to be shifted or realigned after being laid. If necessary to do so, remove unit, clean off, and relay with fresh mortar.
- .11 All cutting of masonry units to be done with a masonry saw to produce straight, clean and even edges.
- .12 Neatly build in all frames, wood nailing strips, lintels, beams, angles, conduits, sleeves, electrical and mechanical items, anchor bolts, weep holes, cavity wall ventilators, flashings, and any other miscellaneous items occurring in masonry walls. Cut masonry as required and neatly seal joints around opening to maintain fire separations.
- .13 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
- .14 At masonry openings less than 450mm wide, unless otherwise detailed, use mild steel plates, minimum 6mm thick, of width 25mm less than supported masonry thickness and with minimum 100mm bearing each end.
- .15 Construct structurally reinforced masonry elements in accordance with requirements indicated on the structural drawings.

3.4. CHASES OPENINGS AND HOLES:

- .1 Chases and openings shall be built in during erection of masonry work, and purpose-made chased units shall be built into proper position.
- .2 Openings in masonry work exceeding 400mm shall be provided with lintels per the lintel schedule.
- .3 Chasing of completed walls or formation of holes shall only be carried out with Consultant's prior approval, and then only with a tool designed to cleanly cut masonry units.
- .4 Chases shall be plumb and shall be min. one unit length from jambs of openings.

3.5. MASONRY BEARING:

- .1 Masonry bearing shall extend full thickness of wall.
- .2 Unless otherwise indicated, provide at least 200mm of bearing for lintels and beams.
- .3 Bearings of block masonry walls: use minimum 2 courses of solid or grouted block units except where concrete bearing pads are required.
- .4 Bearings in brick masonry walls: use solid face brick where exposed to view.
- .5 Build masonry neatly around beam and lintel bearings.

3.6. CONSTRUCTION JOINTS:

- .1 Where fresh masonry joins partially or totally set masonry, clean exposed surfaces of set masonry and remove loose mortar and foreign material prior to laying fresh masonry.
- .2 If necessary to stop off a horizontal run of masonry, rack back one-half masonry unit length in each course. Toothing will not be permitted unless approved by the Consultant.

3.7. BLOCKWORK:

- .1 Do not wet blocks before laying.
- .2 Exposed faces to be full units laid out to minimize cutting with not less than 100mm at any vertical edge or corner.
- .3 Except where indicated otherwise, top course of blocks shall be laid with semi-solid blocks at door and window sills, at wall changes to brick and where shown on the Drawings. Top course of freestanding block walls shall be bull nosed all exposed corners and edges.
- .4 Use solid or grouted block for at least two courses under all point bearing loads.
- .5 Provide bull nose block at all exposed block corners, except at first course above floor and course at ceiling level.
- .6 Provide min. 400mm solid or grouted block for jambs of openings and at ends of walls.

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- .7 Cut exposed units with a power saw to accommodate flush mounted electrical outlets, grilles and other components. Leave a maximum 5mm clearance. Cover plates and flanges must cover cut edges.
- .8 Block work scheduled to be painted or left exposed shall be laid with the utmost care. Distribute units of varying colour and texture evenly to achieve homogeneous blend. Replace at no extra cost units which in the opinion of the Consultant are too contrasting in appearance for satisfactory blending. Note that interior walls are not finally accepted until block filler coat has been applied by painter & accepted.
- .9 Take special care to prevent mortar or other substances from staining exposed block faces. Replace stained blocks as directed by the Consultant at no extra cost to the Contract.
- 3.8. BRICKWORK:**
- .1 Lay face brick to match patterns on existing building. Provide header, soldier, rowlock and special band courses as indicated. Lay curved walls in stack bond.
- .2 Completed brickwork shall appear uniform and well blended, free of contrasting areas. Replace any brickwork which does not meet this requirement at no cost to the Contract.
- .3 Brickwork with an absorption rate of over 1g/min./100mm, when tested in accordance with ASTM C67 shall be dampened before laying.
- .4 Tops of walls that have been exposed for any length of time shall be dampened before work is commenced again, if required.
- .5 Brickwork at different levels shall be stepped in regular proportion between levels.
- .6 Brickwork shall be laid up with the shove joint method in full bed of mortar with horizontal and vertical joints filled flush. Slushing mortar into joints after laying brick is not permitted.
- .7 All joints in brickwork, including bed and collar joints, shall be filled flush as each course is laid. Pull down and rebuild walls / partitions which do not meet this requirement, as directed by Consultant, at no extra cost to Contract.
- .8 Variations in size of brick shall be distributed in wall so that mortar joints are uniform throughout.
- .9 At first brick course over steel lintel place brick directly on membrane flashing without mortar.
- 3.9. CAVITY AND VENEER WALLS:**
- .1 Discuss all aspects of wall construction with Consultant before proceeding to ensure that walls are constructed in accordance with best masonry practice.
- .2 Construct cavity walls in two stages. Construct inner wythe first and coordinate with Sections 07200 and 07265 for installation of air barrier and cavity wall insulation.
- .3 After air barrier and cavity wall insulation have been completed and accepted construct outer wythe.
- .4 After the first course of outer wythe masonry units have been laid install one continuous row of mortar droppings control device at bottom of cavities and veneer air space. Place device on top of membrane flashing, with 'zig-zag' side up. Where cavity / air space is greater than 25 mm use multilayer mortar dropping control device of thickness designed to completely fill space.
- .5 Keep the cavity completely clean and free from mortar droppings or projections. Bevel the cavity edge of the mortar bed immediately after "stringing" the mortar.
- .6 Leave out masonry units at spacing directed by Consultant along bottom of exterior wythe to permit inspection of cavity.
- .7 Remove and rebuild, at no extra cost to the Contract, any exterior wythe where cavity is blocked by mortar droppings. Fill in openings after Consultant has inspected and accepted the work.
- .8 Return masonry veneer at exterior door openings to provide solid masonry jambs for securing door frames; fill all voids solid.

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3.10. JOINT WORK:

- .1 Make joints uniform and 10mm thick unless otherwise shown on the Drawings.
- .2 Joints in exposed and painted surfaces, and in masonry behind wall-mounted and built-in fixtures, shall be tooled when thumbprint hard with a 25mm o.d. plastic tool to produce a concave joint.
- .3 All other joints, including joints in ceiling spaces, joints directly behind resilient base, rigid insulation, ceramic tile and gypsum board, shall be struck flush.

3.11. ANCHORING, BONDING AND REINFORCEMENT:

- .1 Anchor or bond walls and partitions at points where they intersect.
- .2 Except where stack bond is required, bond each wythe or masonry walls and partitions at corners by alternately bonding 50% of units of each wall and partition at corner intersection.
- .3 Bond non-load bearing walls and partitions to load bearing walls with ties spaced at 400mm o.c. vertically. Provide one tie for each 100mm thickness, or part thereof, of wall or partition.
- .4 Anchor masonry walls and partitions to concrete and steel elements with anchors spaced at 400mm vertically.
- .5 Unless otherwise indicated, reinforce all walls and partitions with continuous horizontal metal joint reinforcement, installed at 400mm o.c. vertically.
- .6 At wall openings place continuous reinforcement in first and second mortar joints above and below openings. Additional reinforcement at openings shall extend 610mm beyond both sides of openings.
- .7 Lap reinforcement 150mm at splices. Cut reinforcement at control joints.
- .8 Tie brick veneer to back-up construction in accord with requirements of CAN3-A370-M84.
- .9 Provide continuous horizontal metal reinforcement, installed at 400mm o.c. vertically for all brick veneer which is anchored to existing building.

3.12. CONTROL JOINTS:

- .1 Provide masonry control joints at masonry walls supported by foundation walls as shown on the drawings and as follows:
 - .1 Maximum 6000 mm centres in walls with frequent openings,
 - .2 Maximum 7500mm centres in walls without openings,
 - .3 Within 3000 mm of corners,
 - .4 At abrupt changes in wall height,
 - .5 At changes in wall thickness,
 - .6 At one side of door & window openings and at both sides of openings greater than 1800 mm wide.
 - .7 At intersection of bearing and non-bearing walls.
- .2 Construct control joints by saw-cutting masonry, prior to installation, to provide ½ length masonry units in alternate courses each side. Install flexible bond breaker into end profile of unit on one side of joint only. Fill end joint solid with mortar. Rake vertical joint back 13 mm min. depth for caulking by Section 07900. At exterior control joints, continue flexible vapour barrier across the joint. Install 10mm thick control joint filler in joint between exterior veneer units. Set filler back from face of veneer min. 13mm for caulking by Section 07900.
- .3 Unless otherwise shown, make control joints 10mm wide. Interrupt masonry reinforcement at control joints.
- .4 Control joints must be constructed during erection of masonry and may not be saw-cut later.

3.13. THROUGH-WALL FLASHINGS:

- .1 Install through-wall flashings where indicated on the drawings.
- .2 Install through-wall flashing over, and sealed to, metal drip flashing. Carry drip flashing out beyond face of brick or exterior finish 13mm to provide a clean, crisp drip.
- .3 Lap all joints in membrane flashing min. 50mm and continuously seal.

3.14. FLEXIBLE MEMBRANE FLASHINGS / DAMPPROOF COURSE:

- .1 Install damp proof course on top of foundation walls above grade.
- .2 Install membrane flashing at bottom of cavity walls; where shown on the Drawings and at the following locations:
 - .1 Door heads
 - .2 Window heads
 - .3 Immediately above horizontal interruptions within exterior walls.
- .3 Lap membrane flashing 150mm at joints; seal lap with adhesive.
- .4 In all cases extend membrane flashing 13mm beyond outside face of wall or outside edge of steel lintel. Trim as required to Consultant's later instructions.
- .5 Unless otherwise indicated carry membrane flashing up behind exterior wythe masonry units min. 200mm and turn into concrete block back-up. Mechanically fasten top edge at concrete back-up.

3.15. WEEP AND VENT HOLES:

- .1 Form weep holes by inserting weep/vent hole inserts into exterior wythe mortar joint immediately above all membrane flashings, and at other locations where shown on Drawings. Space weep holes at 610mm o.c. horizontally.
- .2 Form vent holes by inserting weep/vent hole insert into exterior wythe mortar joint 200mm above each weep hole at membrane flashings and near top of each cavity compartment and at other locations indicated on the Drawings. Space vent holes at 610mm o.c. horizontally.
- .3 Keep face of inserts back from face of masonry units minimum 6mm. Keep weep holes free of mortar.

3.16. STEEL DOOR FRAMES:

- .1 All frames set in masonry to be well braced and all anchors provided to be properly set. Brace frames to maintain plumb. Fill spaces between frames and masonry with grout. Fill first core of concrete blocks adjacent to door jambs solid with grout.
- .2 Generally, anchorage of frames shall be by means of standard anchors. Where standard anchors cannot be used, Section 08100 to provide special anchors to ensure proper installation. Method of anchorage shall not be visible when frames are installed.
- .3 Provide minimum 3 anchors at each jamb.

3.17. PARGING:

- .1 Provide parging at exposed block foundation walls to minimum 150mm below finished grade and where indicated on the drawings.
- .2 Parging mix: 1 part Portland cement and 3 parts sand by volume mixed with sufficient water to produce a workable mix.
- .3 Bond coat mix: 24 kg Portland cement and 4L Surfacrete Concentrate and 4L water.
- .4 Prepare substrates and apply bond coat in accordance with bonding agent manufacturer's recommendations. Apply parging while bond coat is still moist and tacky. Apply parging min. 6mm thick, trowel to smooth surface.

3.18. MISCELLANEOUS:

- .1 Where non-load bearing, non-fire rated partitions extend to underside of structure, terminate as detailed. Where not detailed, allow for structural deflection and pack all voids between top of wall and underside of structure solid with compressed rock wool insulation. Refer to Section 07270 for fire stopping requirements at fire rated partitions.
- .2 Provide paper backed galvanized steel lath as required for support of grout and mortar fill within masonry elements.

3.19. FIELD QUALITY CONTROL

- .1 Constantly check levels and coursing with a graduated 'storey' rod.

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- .2 Keep the walls level. Level the work all around twice in each storey height by means of a properly adjusted 'Y' level or a water level.
- .3 Protect built masonry at all times from wind and weather. Brace walls as required and cover tops of walls at completion of day's work. Make good at no cost to Owner any damage caused by improper protection.

3.20. ADJUSTING AND CLEANING

- .1 The face of all exposed masonry to be continuously wiped with a wet cloth or fibre brush as the work progresses to prevent unnecessary mortar stains.
- .2 Examine all surfaces upon completion of work. Any defects, holes, or cracks in joints to be tuck pointed full with mortar to match colour and finish of adjacent joints.
- .3 All finished exposed work to be cleaned in one continuous operation from top to bottom. Clean walls using cleaning detergent and water in strict accordance with manufacturers' instructions. Remove mortar stains, accumulated dirt, and efflorescence.
- .4 Masonry work to be left in a finished condition satisfactory to the Consultant.
- .5 Remove all equipment, surplus materials and debris immediately after completion of the work.

END OF MASONRY

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PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 01400 Quality Control
- .2 Section 03300: Cast-in-place Concrete
- .3 Section 03450: Architectural Precast Concrete
- .4 Section 04200: Masonry
- .5 Section 06100: Rough Carpentry
- .6 Section 06200: Finish Carpentry
- .7 Section 09900: Painting

1.3. QUALITY ASSURANCE

- .1 Work of this section to be executed by a firm thoroughly conversant with laws, bylaws and regulations which govern and capable of workmanship of best grade of modern shop and field practice known to recognized manufacturers specializing in this work. Use workmen skilled in work of this section.
- .2 Qualifications of Welders: welding of any ladder, stair and railing component shall be performed by fabricator certified under CIA W47.1-09.
- .3 Comply with applicable requirements of CAN/CSA-S16-09.

1.4. SUBMITTALS

- .1 Shop Drawings: Submit shop drawings in accordance with General Requirements, Section 01340 and Supplementary Conditions.
- .2 Shop drawings for stairs, balustrades, railings and ladders shall bear stamp and signature of a professional engineer registered in Ontario.

1.5. WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal materials from landfill to metal recycling facility.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Structural Steel Sections & Steel Plate: ASTM A36 / A36M - 14 & CAN/CSA-G40.21-13 minimum 260W Grade.
- .2 Square steel tube: ASTM A36-14 & CAN/CSA-G40.21-13 minimum 260W Grade.
- .3 Steel pipe: ASTM A53, Type E, Grade A.
- .4 Stainless Steel tubing: ASTM A269.
- .5 Sheet steel: hot dip galvanized, cold rolled, with stretcher level degree of flatness to ASTM A653; zinc coating designation Z275.
- .6 Aluminium extrusions: AA 6063-T5 alloy.
- .7 Prepaint Finish: For galvanized surfaces to be exposed and finish painted, shall be to ASTM D6386 – 16a.

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- .8 Galvanizing: Steel specified to be galvanized, except above, ASTM A123 / A123M-15, Zinc (hot-dipped galvanized) coatings on products fabricated from rolled, pressed and forged steel shapes, plates, bars and strips. Galvanize after welding is complete. No welding of galvanized products allowed.
- .9 Welding Materials: CSA W59-13 & CSA W55.3-08 (R2013).
- .10 Primer: CGSB 1-GP-40M.
- .11 Bituminous enamel: alkali resistant asphaltic coating.

2.2. FABRICATION & MANUFACTURING

- .1 General:
 - .1 Fit and assemble work in shop where possible. Execute work according to details and approved shop drawings. Where shop fabrication is not possible, make trial assembly in shop.
 - .2 Do all welding in accordance with requirements of CSA W59-13 & CSA W55.3-08 (R2013).
 - .3 Fit joints and intersecting members accurately. Make work in true planes with adequate fastening.
 - .4 Supply all fastenings, anchors, accessories required for fabrication and erection of work of this section. Such items occurring on or in exterior wall or slab shall be hot dipped galvanized. Make thread dimensions such that nuts and bolts will fit without re-threading or chasing threads.
 - .5 Make exposed metal fastenings and accessories of same material, texture, colour and finish as base metal on which they occur unless otherwise shown or specified. Keep exposed fastenings to absolute minimum evenly spaced and neatly laid out. Make fastenings of permanent type unless otherwise indicated.
 - .6 Close exposed open ends of tubular members with welded on steel plugs.
 - .7 Grind off mill stampings and fill recessed markings on steel components left exposed to view.
- .2 Bollards:
 - .1 Build in accordance with detail drawings.
- .3 Galvanized bent steel gas line guard:
 - .1 Build guard full extent of gas piping on wall at meter location and to suit size of gas piping with 100mm clearance all around.
 - .2 Secure to wall with masonry anchors through concealed steel mounting brackets at max 1200mm centers. Secure guard to brackets using tamper-resistant fasteners.
- .4 Roof Ladders:
 - .1 Unless otherwise detailed construct ladders as follows:
 - .1 C100 x 8 steel channel stringers extending from floor to minimum 1.2 m above top rung.
 - .2 19mm dia. Rungs, minimum 450mm wide, spaced at 300mm o.c. vertically, welded to stringers.
 - .3 Stringers shall be attached to walls with 13 x 50mm steel bar yokes, U-shaped, spaced at maximum 1.2 m o.c. vertically. Yokes shall keep stringers 250mm clear of wall face.
 - .4 Stringers shall have minimum 10mm thick base plate for anchorage at base.
- .5 Masonry Lateral Support Brackets:
 - .1 Fabricate masonry lateral support brackets in sizes, shapes and quantity required to meet requirements of OBC and CSA-A370-14.
 - .2 Supply and install channel or angle brackets to support tops of non-loadbearing masonry partitions where lengths exceed 5 m between intersecting wall or supports. Brackets shall occur at maximum 1.2 m o.c. and maximum 2 m from intersecting walls. Refer to structural drawings for locations of support brackets.

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- .3 Supply and install support brackets complete with all required anchors and fasteners.
- .6 Finishes:
 - .1 Thoroughly clean all ferrous metal in accordance with CGSB 31-GP-404A.
 - .2 Grind smooth sharp projections.
 - .3 Remove oil and grease by solvent cleaning.
 - .4 Apply coatings in the shop and before assembly. Where size permits, galvanize components after assembly.
 - .5 Interior components: shop apply one coat of primer after fabrication except where stainless steel, galvanized or zinc rich paint finish is required.
 - .6 Exterior components to be painted, except where other finish is indicated: Blast clean metal to "Near White Grade" (SSPC-SP-10) and spray apply a coat of zinc rich paint, maximum 3 mils thick.
 - .7 Hot dip galvanize exterior components not scheduled to be painted, components located within exterior building elements, and where so indicated, interior components after fabrication in accord with requirements of ASTM A123 / A123M-15, minimum coating weight 380 g/m2.
 - .8 Apply coat of bituminous enamel to contact surfaces of metal components in contact with cementitious materials and dissimilar metals.

PART 3: EXECUTION

3.1. INSPECTION

- .1 Prior to installation of metal fabrications, carefully inspect the installed work of all other trades and verify that all such work is complete to the point that this installation may properly commence.

3.2. PREPARATION

- .1 Check and verify all dimensions upon which the work of this section depends. Fabricators will be responsible for taking their own field dimensions.

3.3. INSTALLATION

- .1 Where items are required to be built into masonry, concrete or other work, supply such items to respective sections at proper schedule time with all anchors, accessories and instructions for building in.
- .2 Build and erect work plumb, true, square, straight, level & accurate to sizes detailed on approved shop drawings, free from distortion or defects detrimental to appearance and performance.
- .3 Insulate metals where necessary to prevent corrosion due to contact between dissimilar metals and between metals and masonry, concrete or plaster. Use bituminous paint, butyl tape, building paper or other approved means.
- .4 After erection and installation, thoroughly clean work and apply field touch-up of same formula as shop coat primer to all damaged or unpainted surface of shop primed material. Work primer well into all joints, crevices, interstices and open spaces.

3.4. PROTECTION

- .1 Protect all materials from damage during storage and during the construction period.
- .2 Any damaged material which cannot be repaired to "as new" condition on site, to be totally removed and replaced at an additional cost to the Owner.

3.5. SCHEDULE

- .1 Supply and install all miscellaneous metal work indicated on drawings and not included in work of other sections. Including but not limited to:
 - .1 Lateral supports for non-load bearing masonry partitions and walls.
 - .2 Galvanized steel anchor bolts, 10mm diameter, 300mm long to secure wood blocking at parapets and walls as detailed.

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- .3 Vanity, bench and millwork counter supports.
- .4 Steel bollards as detailed on the Drawings.
- .5 Galvanized bent steel wall guard at gas piping.
- .6 Galvanized steel roof ladders to access high roof areas as shown on the drawings.
- .7 Other metal fabrications shown on the Drawings and not specifically covered in other Sections.

END OF MISCELLANEOUS METALS

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. REFERENCES

- .1 Grade lumber in accordance with rules and regulations of the National Lumber Grades Authority.
- .2 Dimensions of lumber shall conform to dressed sizes specified in CAN/CSA-0141-05 (R2014) unless actual dimensions are otherwise indicated or specified.
- .3 Dimensional references to lumber on Drawings and in Specifications are to nominal sizes unless actual dimensions are indicated. Such actual dimensions shall be dry size.
- .4 Nails must conform to ASTM F1667, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

1.3. ENVIRONMENTAL REQUIREMENTS

- .1 When it is required that wood maintain dimensional stability and tolerances to ensure accurate installation of later work, store and install it only in dry areas, and where no further installation of moist materials is contemplated.

1.4. DELIVERY, STORAGE AND HANDLING

- .1 Handle, transport and store products to prevent absorption of, or damage from moisture and in accordance with Section 01 45 00 – Quality Control.
- .2 Stack materials with 6 in. (150 mm) clearance off ground.

1.5. LUMBER REQUIREMENTS

- .1 Moisture content of lumber at time of installation must be S-DRY - maximum 19% moisture content.
- .2 Lumber must be sound and free of imperfections and deficiencies which impair strength and durability.

1.6. SECUREMENT OF LUMBER

- .1 Members must be framed, anchored, fastened, tied and braced to provide necessary strength and rigidity.
- .2 Individual pieces must be secured with minimum of 2 fasteners at all corners.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Lumber and fastenings shall conform to:
 - .1 Requirements of local jurisdictional authority.
 - .2 Ontario Building Code, Section 3, 4 or Part 9 as applicable.
 - .3 Grade mark lumber by the appropriate association under authority of the Canadian Lumber Standards Accreditation Board (CLSAB).
 - .4 Moisture content of lumber at time of building-in shall not exceed 19%.
- .2 Lumber:
 - .1 Spruce-Pine-Fir Species Group Designation, framing lumber, with no more than 15% of next lesser of specified grade included.
 - .2 For utility use where concealed: sound and free of imperfections or deficiencies.
- .3 Plywood: Canadian Softwood Plywood, CSA O151-09 (R2014); Good One Side, except in concealed locations use Sheathing Grade, 13mm thick unless indicated otherwise.
- .4 Plywood Sheathing: 13mm and 19mm thick, exterior grade to CSA O151.

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- .5 Pressure Treated Wood: Wolmanized or equal, CAN/CSA-O80 Series-15, for water-borne preservative treatment to obtain minimum net retention of 4 kg/m³.
- .6 Wood Preservative: Copper Naphthenate Solution (2% Copper) to AWPA Standards. To be used to paint ends of cut lumber.
- .7 Blocking, furring, nailers and cants: 2 in. x 4 in., 2 in. x 6 in., 2 in. x 8 in. or by width required, 4 in. x 4 in. wood cant and wood shims, No. 1 Grade, exterior grade, conforming to CAN/CSA-O80 SERIES -15 – Wood Preservation.
- .8 Fasteners: Are to be of sufficient length to penetrate concrete decks 1 1/2 in. (38 mm), metal decks 3/4 in. (19 mm) and 1 1/2 in. (38 mm) into wood.
 - .1 Wood and Metal Deck Screws (Low profile head):
 - .1 Roofgrip #14 Buildex by ITW Construction Products
 - .2 #14 Heavy Duty Drill Point Fastener by Tru-Fast
 - .3 Rawl #14 Deck Screw by Rawlplug Canada Ltd.
 - .2 Masonry/Concrete Anchors (Phillips head):
 - .1 Tapcon Plus, 1/4 in. (6 mm) diameter, Climaseal coated by ITW Construction Products.
 - .2 Tap-Grip heavy duty self-tapping concrete anchors by Perma-Grip Fasteners.
 - .3 Rawl PERMA-SEAL TAPPER, 1/4 in. (6 mm) diameter by Rawlplug Canada Ltd.

PART 3: EXECUTION

3.1. INSTALLATION

- .1 General:
 - .1 Layout work carefully and to accommodate work of others. Cut and fit accurately, erect in position indicated by Drawings. Align, level, square, plumb, and secure work permanently in place. Brace work temporarily as required. Join work only over solid backing.
 - .2 Bore holes true to line and to same size as bolts. Drive bolts into place for snug fit and use plates or washers for bolt head and nut bearings. Turn up bolts and lag screws tightly when installed and again just before concealed by other work or at completion of Work.
 - .3 Provide anchors, bolts, and inserts required for attachment of the work of this Section, to those performing the work of other Sections and who are responsible for their installation.
 - .4 Work shall include rough hardware such as nails, bolts, nuts, washers, screws, clips, hangers, connectors, and strap iron required for installation of work.
 - .5 Do not attach work by wood plugs or blocking in concrete or masonry. Use lead shields, expansion shields, or similar methods only as approved by Architect
- .2 Fasteners
 - .1 For structural concrete applications, pre-drill pilot hole to manufacturer's requirements.
 - .2 Pilot hole must be at least 1/2 in. (12.7 mm) deeper than required embedment. Do not overdrive or underdrive fasteners
- .3 Rough Framing:
 - .1 Provide all blocking, strapping, furring, sleepers, nailers, grounds and any other miscellaneous rough framing required in the work.
 - .2 Provide required provisions for fastening rough framing. Ensure rough framing is located and secured to suit site conditions and adequate for intended support.
 - .3 Cut work into lengths as long as practicable and with square ends. Erect work plumb, in true planes, and fastened rigidly in place.
 - .4 Provide grounds for manufactured specialties and verify they are located correctly and that they provide adequate support.
- .4 Pressure Treatment:

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- .1 Use pressure treated wood for wood items of rough carpentry installed exterior to the building, incorporated with roofing systems, and installed in contact with concrete or masonry. Apply one coat of wood preservative to freshly cut ends, trimmed or bored pieces.

END OF ROUGH CARPENTRY

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 See all other sections of specifications for extent of caulking provided by those sections.

1.3. REFERENCES

- .1 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualifications Board for Joint Sealant.
- .2 CAN/CGSB-19.24 - Multi-Component, chemical curing sealing compound.
- .3 CAN/CGSB-19.13 - One Component, elastomeric, chemical curing sealing compound.

1.4. SUBMITTALS

- .1 Samples: Submit sample to Consultant for approval of each type of sealing compound proposed for use on this project together with recommended primers and joint fillers proposed for use. Submit standard available colours for selection by Consultant. Make submissions and gain approvals in sufficient advance time to ensure that materials and colours selected are ordered and on site when required.
- .2 Guarantee: Submit to Consultant written guarantee covering all caulking performed by this section against defects in materials and workmanship. Guarantee shall be effective for period of five (5) years from date of Substantial Performance of entire project.

1.5. ENVIRONMENTAL REQUIREMENTS

- .1 Conform to manufacturer's recommended temperatures, relative humidity and substrate moisture content for application and curing of sealants including special conditions governing use.
- .2 Ventilate area of work as directed by Consultant, by use of approved portable supply and exhaust fans.
- .3 Materials must be stored at a minimum of 68°F (20°C) immediately prior to application.
- .4 Caulking must be carried out when ambient temperature is above 32°F (0°C).

1.6. QUALITY ASSURANCE

- .1 Work of this section shall be performed by fully trained personnel specializing in application of caulking materials.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Sealing Compound Type A: Multi-component, chemical curing, conforming to CAN/CGSB-19.24-M90, Type 2 Class B, ASTM C 920 Type M, Grade NS, Class 50, Use T, I, M, A and O such as "Dymeric 240" by Tremco.
- .2 Sealing Compound Type B: Mildew resistant, conforming to CAN/CGSB-19.13-M87, ASTM C 920 Type S, Grade NS, use NT, G, A and O such as "Tremsil 200" containing fungicide by Tremco.
- .3 Colours of Sealants: as selected by the Consultant unless otherwise specified, normally to match the predominant material to which sealant is applied.
- .4 Joint Filler / Backer Rod: Polyethylene foam rope, closed cell type circular cross section. Must be 1/8 in. (3 mm) larger than joint width.
- .5 Bond Breaker Tape: closed cell polyethylene bond breaker tape, self-adhering one side.

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- .6 Joint Cleaner / Primer: Non-corrosive and non-staining type, compatible with joint forming materials and sealant as recommended by sealant manufacturer.

PART 3: EXECUTION

3.1. PROTECTION

- .1 Protect installed work of other trades from staining or contamination.

3.2. PREPARATION

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backer rod and sealant.
- .2 Clean joints and spaces to be caulked to ensure that they are dry and free from dust, loose mortar, oil, grease and other foreign material. Clean ferrous metal of all rust, mill scale and foreign materials by wire brushing, grinding or sanding. Wipe all metal surfaces to be caulked with cellulose sponges or clean rags soaked with joint cleaner and wipe dry with clean cloth.
- .3 Joints in surfaces to be painted shall receive sealing compound before surfaces are painted. Where surfaces to be caulked are primed in shop, prior to caulking check to ensure prime painting and caulking materials are compatible.
- .4 Do not apply sealant 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.
- .5 Ensure joint surfaces are dry and frost free.

3.3. 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.

3.4. BACKER ROD

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler in joints 6 mm and more in width. Roll rope filler into joint, do not stretch or braid. Install bond breaker in joints less than 6 mm in width.
- .3 Install backer rod to achieve correct joint depth and shape, with approximately 30% compression.

3.5. APPLICATION

- .1 Apply sealing compounds using air or hand operated guns fitted with suitable nozzles and equipment approved by compound manufacturer. Apply in strict accordance with manufacturers' directions and recommendations.
- .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide a neat joint.
- .3 Apply sealing compounds under pressure in manner that ensures good adhesion to sides of joints. Form surfaces smooth, free from ridges, wrinkles, air pockets and embedded foreign matter.
- .4 Tool exposed surfaces before skinning begins to give slightly concave shape.
- .5 Remove excess compound promptly as work progresses and upon completion.
- .6 Apply sealants in accordance with the following table:

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JOINT WIDTH SEALANT DEPTH

5 MM 5 MM

10 MM 7 MM

15 MM 10 MM

20 MM 12 MM

25 MM 15 MM

- .7 Where recommended by sealant manufacturer, vent exterior joints in accord with such recommendations.
- 3.6. CURING**
- .1 Cure sealant in accordance with the manufacturer's requirements.
- .2 Do not cover up sealants until proper curing has taken place.
- 3.7. CLEAN UP**
- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess and droppings using recommended cleaners as work progresses.
- .3 Remove bonding tape after initial set of sealant.
- .4 Upon completion remove debris, tools, equipment and materials and clean up in accordance with Section 01000, General Instructions.
- 3.8. SCHEDULE**
- .1 Using sealing compounds specified in following locations:
- .1 Type A: Generally for exterior use and for interior use where surfaces will be painted, such as between exterior metal door frames and wall, at exterior control joints, interior control joints, interior window and door frames and at all other locations not covered by Type B.
- .2 Type B: Generally for interior use where surfaces won't be painted, such as around fixtures, at sink/counter/wall junctions, etc.
- .2 Apply sealant at the junction of the following interior finish materials:
- .1 Between dissimilar materials in exposed locations except where specifically indicated otherwise:
- .1 Concrete to concrete.
- .2 Concrete to metal.
- .3 Concrete to masonry.
- .4 Masonry to masonry.
- .5 Masonry to metal.
- .6 Masonry to wood.
- .7 Metal to metal.
- .8 Metal to wood.
- .9 Gypsum board to concrete.
- .10 Gypsum board to metal.
- .11 Gypsum board to masonry.
- .3 Apply sealant at all connections with roofing and sheet metal work.
- .4 Caulk control, construction and expansion joints unless otherwise indicated.
- .5 Caulk both sides of deflection space between top of **non-fire rated** masonry walls and underside of structure above.
- .6 Caulk around ducts, pipes and conduit penetrating exterior and interior non-fire rated masonry and concrete walls.

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- .7 Caulk joints between steel and masonry.
- .8 Caulk joints between hollow metal and aluminium door, window and screen frames and adjacent surfaces, including floor surfaces.
- .9 Caulk joints between millwork and adjacent walls.
- .10 Caulk joints between plumbing fixtures and adjacent surfaces.

END OF SEALANTS

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Conform to all applicable sections of Division 1.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 04200: Masonry
- .2 Section 06100: Rough Carpentry
- .3 Section 07200: Insulation
- .4 Section 07900: Sealants
- .5 Section 08800: Glass and Glazing

1.3. SCOPE OF WORK

- .1 This Contractor shall supply all labour, materials and equipment necessary to install the following:
 - .1 aluminium windows
 - .2 glazing of work listed above
 - .3 insect screens for operable units
 - .4 internal reinforcing as called for or required
 - .5 all related sills, vertical/horizontal mullions, corner & column covers, trim, insulated and non-insulated blank bases or panels, mullion reinforcing, anchors, fasteners, flashings, foam sealant and caulking
 - .6 continuous bent aluminium vapour barrier / anchor (designated BAA on drawings)
 - .7 installation of finishing hardware for above listed items supplied by this Section or Section 08710.

1.4. SUBMITTALS

- .1 Shop Drawings: Submit shop drawings in accordance with General Conditions and Supplementary Conditions.
- .2 Samples: Upon request by Consultant, submit labelled samples of framing members, glazing and finish.
- .3 Test Data: Upon request by Consulting, submit test report from independent testing laboratories certifying compliance with performance criteria.

1.5. WARRANTY

- .1 All work of this section shall be warranted against leaks, irregularities, faulty material, faulty workmanship or poor installation of same. Corrective work performed under warranty shall be to Consultant's approval and at no additional cost to Owner. Warranty shall be effective for period of two (2) years from date of Substantial Performance of entire project. Also submit following extended warranties:
 - .1 Five (5) year warranty on all windows
 - .2 Five (5) year warranty on all caulking
 - .3 Ten (10) year warranty on hermetically sealed units

1.6. QUALITY ASSURANCE

- .1 Aluminium manufacturer shall be responsible for design and fabrication of all system components to ensure they meet loads imposed and allow for expansion/contraction of materials without failure of joint seals, visible distortion in glazing panels, or undue stress on fastening mechanisms.
- .2 Total aluminium frame assemblies shall meet or exceed the following criteria:
 - .1 Fixed Aluminium Frame Windows: CAN/CSA-AA40-M90, Air Tightness - A3, Water Tightness - B4, Wind Load Resistance - C5 and Condensation Resistance - If=67.
 - .2 Operable Aluminium Frame Windows: CAN/CSA-AA40-M90, Air Tightness - A3, Water Tightness - B4, Wind Load Resistance - C5 and Condensation Resistance - If=60.

- .3 Aluminium Curtain Wall: CAN/CSA-AA40-M90, Air Tightness - FIXED, Water Tightness – B4, Wind Load Resistance – C5 and Condensation Resistance – If=61.
 - .3 Doors and windows shall be designed to meet or exceed air and water infiltration performance criteria of applicable CGSB standards and shall safely withstand local wind and snow loadings acting on plane of unit per latest codes.
 - .4 Fabrication and installation work of this section shall be performed by skilled trained personnel working for firm with provable minimum of five years' experience in materials and assemblies specified.
 - .5 Caulking work of this section shall be performed by skilled experienced personnel in strict accordance with methods and procedures outlined in Section 07900. Submit proof of such experience if requested by Consultant.
- 1.7. WINDOW TESTING AND INSPECTION**
- .1 An independent testing company selected by the Consultant will perform all testing and required re-testing, conduct periodic inspections of the work as installation progresses, and provide written reports.
 - .2 The window installation will be inspected for:
 - .1 Adherence to details and shop drawings.
 - .2 Compliance with specifications.
 - .3 Proper installation of components and application of sealants
 - .3 Two windows will be selected at random by the Consultant for testing after all windows have been installed.
 - .4 Only completely installed windows shall be tested. All air barrier and perimeter sealants shall be installed prior to testing.
 - .5 The window will be tested for:
 - .1 Air tightness.
 - .2 Water tightness.
 - .3 Wind load resistance.
 - .6 Costs for window testing and inspection will be paid directly by the Owner.
 - .7 Test windows under the provisions of Section 1400 – Quality Control.
 - .8 **The window subcontractor shall pay for re-testing required due to a window installation failing the initial test.** Re-testing by the same inspection and testing company shall be repeated until results acceptable to the Consultant are achieved.

PART 2: PRODUCTS

2.1. MANUFACTURER

- .1 This portion of specification has been prepared on basis of using products by Kawneer Company of Canada to establish minimum acceptable standard. Equivalent products by approved manufacturers listed below will be acceptable provided they meet or exceed performance criteria set out herein as determined by the Consultant. Manufacturers are to provide shop drawings, mock-ups and engineering data as requested by the Consultant indicating compliance with the specified requirements. The Consultant shall have the final right of acceptance of equivalence.
- .2 Acceptable Manufacturers:
 - .1 Alumicor Limited
 - .2 Commercial Aluminium
 - .3 Kawneer Company of Canada

2.2. MATERIALS

- .1 Aluminium extrusions: all members shall be extruded from 6063-T5 or 6063-T6 alloy, and shall be free of die lines and other defects impairing their function or appearance.

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- .1 Finish: All exposed exterior and interior aluminium components for windows shall be clear anodized finish.
 - .2 Glass: to meet specified requirements of Section 08800.
 - .3 Glazing Tape: Macro-polyisobutylene, highly adhesive and elastic, with built-in EPDM or neoprene shim (PVC shim not acceptable), such as "Polyshim 2" by Tremco or approved equal.
 - .4 Setting blocks: use compatible blocks of 85 +/- 5 "Shore A" durometer of 100 mm minimum length. Of depth to fully support glazing, and to conform to IGMA recommendations.
 - .5 Air-Vapour Barrier / Anchor (**BAA**):
 - .1 aluminium sheet, minimum 2 mm thick, bent to profile shown on Drawings, continuous around perimeter of ALL aluminium frames and of sufficient width to correctly interface with adjacent air-vapour barriers. Provide overlap and continuous air tight seal to wall vapour barrier and window frame and securely fasten to the wall around the frame perimeter.
 - .2 **Alternatively** use an engineered transition membrane mechanically attached to window assembly such as 'Proglaze ETA' by Tremco or approved alternative.
Engineered transition assembly to include the following components:
 - .1 Extruded aluminum adaptor: Alodine finished aluminum adaptor with a Tape Adaptor complete with butyl tape, Tremco 440 Tape, pre-applied on backside.
 - .2 Silicone rubber extrusion: Extruded, 40 durometer, translucent silicone extrusion with lock-in dart.
 - .3 Silicone rubber corners: Premolded, 40 durometer, translucent silicone with lock-in dart.
 - .4 Fasteners: Metal screws as recommended by engineered transition assembly manufacturer.
 - .5 Silicone sealant: ASTM C920, single-component, neutral-curing silicone sealant in colour as selected by the Consultant. 'Spectrem 1' by Tremco
 - .6 Sills, End Drip Deflectors, Receptors, Pannings, Trims, T-Mulls, Corners, Break-shapes: supply and install as indicated on the Drawings.
 - .7 Additional steel reinforcing: it is the responsibility of this Section to provide additional concealed steel reinforcing as required to support windows, doors and door frames, and to provide secure backing for all finish hardware.
 - .8 Insect Screens: Extruded aluminium frame with rigidly joined corners. Screen mesh held in place with a spline. Heavy duty rated. Insect screens installed on the exterior shall be **mechanically fastened** to the window frame in a vandal-proof manner.
 - .9 Glazing Seals/Gaskets: Extruded EPDM or neoprene of durometer appropriate to function.
 - .10 Foam Sealant: Shall be Tremglaze LEF as manufactured by Tremco (416) 421-3300 or Polycel as manufactured by I.F. Industries (416) 827-6358.
 - .11 Sealing Compound: Multi-component, chemical curing, sealant, conforming to CAN/CGSB-19.24-M90 Type 2, ASTM C 920 Type M, Grade NS, Class 50, Use T, I, M, A and O. such as "Dymeric 240" by Tremco.
 - .12 Weatherstripping: Durable, non-absorbing material resistant to deterioration by weathering and aging.
 - .13 Insulated Aluminium Panels (IAP): shall consist of sheer 3.2mm thick aluminium spandrel panels, 89 mm thick Owens Corning CW225 insulation and 1.2 mm thick pre-finished aluminium back pan. Provide all necessary reinforcing, clip angles, fasteners, caulking etc. to ensure rigid, watertight placement of panels. Panels shall be given a factory applied thermosetting acrylic enamel coating or shall be clear anodized finish)
 - .14 Aluminium Frame Windows:
 - .1 Window shall be of "**rain-screen**" **design**, with all glazing pockets vented, pressure equalized and drained to the exterior.

- .2 Fixed Aluminium Windows shall be Kawneer 518 Isoport Fixed Thermal Windows, thermally broken, full rain screen framing. Depth of perimeter frame shall be +/-127 mm.
- .3 Operable Aluminium Windows shall be Kawneer 526 Isoport Vent Windows (Refer to drawings for Projection), thermally broken framing. Finish and glazing to match those of fixed windows. Provide heavy duty 4 bar hinges, cast white bronze cam locks. Provide sample for approval by Consultant per Section 01340 Shop Drawings.
- .4 Provide insect screens for all operable sections.
- .5 Provide one (1) sash pole per room where cam locks for operable sections are located more than 1500mm AFF.
- .6 Sills to be fabricated of aluminium to profiles indicated minimum 2 mm thick. Provide drip deflectors at sill ends and at abutting vertical surfaces.
- .7 Glazing for all fixed window panels shall be Type 1 25mm thick hermetically sealed units per Section 08800, unless noted otherwise.

2.3. FABRICATION

- .1 Frame sections shall be extruded from Alcan 6063-T5 alloy to shapes and sizes shown on drawings and described in Kawneer brochures for various systems specified.
- .2 Sheet aluminium for covers, trim, insulated and non-insulated basis and panels, etc. shall be anodizing quality.
- .3 Screws, miscellaneous fasteners and other internal components shall be stainless steel, plated or other corrosion-resistant material of sufficient strength to perform functions intended. Conceal fastenings unless otherwise indicated on approved shop drawings.
- .4 Draw joints together and secure by means of screws driven through walls and into integral screw channel of abutting member.
- .5 Design coupling mullions to eliminate "seam joint" on weathered side while providing functional split to permit unit module construction and to provide for thermal expansion.
- .6 Make allowances for deflection of structure to ensure that structural loads are not transmitted to aluminium framing.
- .7 Provide mullion wall thicknesses, internal reinforcement and mullion extensions necessary to provide adequate strength, stiffness and connections that suit overall loads imposed on configurations indicated on drawings.
- .8 Accurately form cut-outs, recesses, mortising or milling required for finishing hardware in accordance with templates supplied and adequately reinforce with heavy duty aluminium or galvanized steel plates.
- .9 Provide all vertical and horizontal mullions, corner and column covers, trim, insulated bases and panels, accessories, fasteners, integral wood blocking, etc. necessary for total aluminium assemblies indicated on drawings. Unless otherwise shown, aluminium to be minimum 2 mm thick.
- .10 Fabricate extruded or formed aluminium sills with profiles indicated and to suit wall condition. Provide drip deflectors at sill ends and at abutting vertical surfaces. Open ends of sills shall be fitted with neatly applied closure plates. Anchors shall be designed not to work loose after installation. Unless otherwise detailed, provide flush slip joint at intermediate sill joints.

PART 3: EXECUTION

3.1. INSTALLATION

- .1 All items shall be installed, glazed and adjusted by experienced workmen in accordance with manufacturer's instructions and approved shop drawings.
- .2 All items in this section shall be set in their correct location and shall be level, square, plumb and at proper elevation and alignment with other work. Components shall be interfaced with adjacent building materials as shown on drawings and shop drawings using appropriate fixing components.

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- .3 Aluminium to be placed adjacent to concrete, mortar, or dissimilar metals shall be given heavy coat of bituminous paint on contacting surfaces to prevent damage by electrolysis.
- .4 Foam Insulation: All voids between aluminium frames and masonry openings shall be completely filled with foam insulation per Section 07200.
- .5 Caulking: All joints between aluminium frames and masonry and between individual components of aluminium assembly shall be caulked tightly in accordance with materials and methods of Section 07900 to provide weather tight assembly.

3.2. PROTECTION

- .1 Protect pre-finished surfaces of metal work with protective coatings or wrappings to remain in place until construction completion. Use materials recommended by finishers or manufacturers of metals to ensure that method is sufficiently protective, easily removed and harmless to finish.
- .2 Remove protection from metal glazing surfaces before installation of glass.
- .3 Maintain protection from time of installation to final cleanup in accordance with Section 01700.

3.3. CLEAN UP

- .1 Clean up in accordance with Section 01700.

END OF ALUMINIUM WINDOWS AND ENTRANCES

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. SCOPE OF WORK

- .1 The Work of this Section includes the Supply, Installation and Inspection of accessories and finishing hardware described in this section, the hardware schedule appended to this Section and as noted on the drawings.
- .2 Hardware Supply:
 - .1 Supply is by a specialist Hardware Supplier as pre-qualified herein for the following scope:
 - .1 Supply of door hardware for exterior steel doors,
 - .2 Supply of door hardware for any exterior and interior aluminium doors,
 - .3 Supply of door hardware for interior steel and wood doors,
 - .4 Supply of locksets and hinges to the millwork subcontractor for millwork closet units with 45mm thick doors,
 - .5 Supervision of door hardware installation (Hardware Consultant),
 - .6 Supply and installation of automatic operators,
 - .7 Supply and installation of all low voltage wiring. (Conduit provided by Division 26.)
- .3 Hardware Installation:
 - .1 Installation by the General Contractor or by qualified personnel appointed by the General Contractor: Installation of hardware for interior wood and steel doors and exterior steel doors and coordination of installation of automatic operators with Division 26.
 - .2 Installation of locksets at teacher's closets and tall cabinets by the millwork subcontractor.
 - .3 Installation of any aluminium door hardware by the aluminium door supplier.
- .4 Hardware Inspection:
 - .1 Independent Inspection of installed door hardware by Hardware Inspector appointed by the Owner and paid through the Cash Allowance Section 01020.

1.3. RELATED SECTIONS

- .1 Section 01020: Cash Allowance to cover the cost of an independent hardware inspection.
- .2 Section 06200: Finish Carpentry
- .3 Section 08100: Hollow Metal Doors and Frames
- .4 Section 08200: Wood Doors
- .5 Division 26: Conduit for low voltage wiring, electric power supply for power door operators and hold-open devices.

1.4. REFERENCES

- .1 CAN/CGSB -69.17 Bored and Pre-assembled Locks and Latches.
- .2 CAN/CGSB -69.18/ANSI/BHMA-A156.1 Butts and Hinges
- .3 CAN/CGSB -69.19/ANSI/BHMA-A156.3 Exit Devices.
- .4 CAN/CGSB -69.20/ANSI/BHMA-A156.4 Door Controls (Closers).
- .5 CAN/CGSB -69.29/ANSI/BHMA-A156.13 Mortise Locks & Latches.
- .6 CAN/CGSB -69.34/ANSI/BHMA-A156.18 Materials & Finishes.

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- .7 Canadian Steel Door Manufacturers Association (CSDMA), Recommended Dimensional Standards for Commercial Steel Doors and Frames.
 - .8 NFPA 80 Standard for Fire Doors and Other Opening Protectives.
 - 1.5. REQUIREMENTS OF REGULATORY AGENCIES**
 - .1 Hardware for doors in fire separations and exit doors shall be certified by a Canadian Certification Organization accredited by the Standards Council of Canada.
 - 1.6. SUBMITTALS**
 - .1 Door Hardware List: supply one (1) digital copy of a detailed final door hardware list prepared by a qualified Architectural Hardware Consultant.
 - .1 List items to be furnished and delivered under this Section.
 - .2 Indicate door hardware proposed, identifying each item by manufacturer name, model number, material, function, finish, location and other pertinent information. List shall be in same format as that bound in this specification.
 - .2 Templates: Supply templates to installers and fabricators as required for proper location and installation of hardware.
 - .3 Closeout Submittals: Provide maintenance, operating, and installation instructions for each type of door hardware for incorporation into Operating and Maintenance Manual per Section 01700. Include the following information:
 - .1 Name of hardware distributor, address and contact name,
 - .2 Copy of final "as-built" finish hardware schedule,
 - .3 Wiring diagrams, elevations, risers, point-to-point,
 - .4 Maintenance instructions for each product,
 - .5 Catalogue cut sheets and product specifications for each product,
 - .6 Parts list for each product,
 - .7 Installation instructions and templates for each product.
 - 1.7. MAINTENANCE**
 - .1 Supply tools necessary for maintenance and adjustment of equipment as required. Deliver to Owner's place of storage.
 - .2 Provide 1 complete set of wrenches and fastening tools for locksets and closers.
 - 1.8. DELIVERY, STORAGE AND HANDLING**
 - .1 Package hardware and label with description of contents and installation location. Refer on labels to hardware list designation, and with door number when applicable.
 - .2 Store hardware in a locked, clean and dry area and in a manner to allow easy access to each item group as needed, without disruption of storage arrangement. Provide written confirmation to the Consultant that the storage area is adequate and secure.
 - 1.9. FIELD QUALITY CONTROL**
 - .1 Architectural Hardware Consultant:
 - .1 The hardware supplier shall have in its' employ an Architectural Hardware Consultant who is a current member of the Dorr and Hardware Institute, and who shall be made available for consultation during the course of construction at no additional charge to the Owner.
 - .2 The Architectural Hardware Consultant shall supervise hardware installation, provide assistance to the hardware installer, and carry out inspections and provide written certification of the finished door hardware installation.
 - .3 Allow for a minimum of three (3) inspections during installation and one (1) final inspection.
 - .2 Hardware supplier to organize with the manufacturer a pre-installation seminar with the contractor/installer. At this meeting the contractor/installer will be shown proper installation methods for the products to be used on the project.

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- .3 Hardware supplier shall perform bi-monthly on site inspections during hardware installation and provide inspection reports listing progress of work, unacceptable work and corrective measures. The contractor/installer shall repair or replace as directed by the consultant.
- .4 Upon completion of finish hardware installation, the hardware supplier and the contractor/installer shall inspect the work and provide a list of all hardware deficiencies. The hardware supplier shall re-inspect when notified by the contractor/installer as to the clearing of deficiencies. The hardware supplier and the contractor/installer shall certify in writing that all hardware items and their installation are in accordance with all requirements of the contract documents. Final inspection must ensure all hardware items operate as per manufacturer requirements. Co-ordinate inspections with manufacturer's representative as required to establish warranties.
- .5 Installers must have a minimum of five (5) years' experience in installation of hardware. Provide verification of installer's qualification to Consultant for approval. Installers to attend review meetings with Hardware Supplier.

1.10. WARRANTY

- .1 Submit a warranty for door hardware on a form approved by the Owner and in accordance with the Contract Requirements, but for a period of three (3) years. Where a manufacturer's standard warranty period exceeds three years it shall prevail.
- .2 Warranty shall cover the labour and materials necessary to repair both products and installation found to be faulty during the warranty period, including damage to doors caused by product failure or faulty installation, for the entire period and shall be submitted by the hardware installer.
- .3 Warranties shall commence on the date of Substantial Performance of the Contract.

PART 2: PRODUCTS

2.1. GENERAL

- .1 Hardware supplier shall thoroughly review the door hardware list appended to this Section, the architectural door and hardware schedules and the drawings to ensure that listed hardware is suitable by dimension and function for intended purpose prior to preparing the final door hardware list. Inform Consultant of discrepancies.
- .2 The Base Bid shall be based only on the manufacturers and products specified and listed in the Door Hardware List appended to this Section. An Alternate Price may be submitted using approved alternate products only.
- .3 Use one manufacturer's products for similar items which shall have consistent colour and finish throughout Project.
- .4 Supply door hardware by one of the following companies, approved to supply or distribute specified products:
 - .1 Approved Hardware Suppliers:
 - .1 Wilson Hollow Metal Sales, Mississauga 905-564-2112
 - .2 Commercial Doors & Hardware, Toronto 416-749-7231
 - .3 Great Lakes Architectural Hardware, Hamilton 905-383-3334
 - .4 Regional Doors & Hardware, St. Catharines, 905-684-8161
 - .5 Upper Canada Specialty Hardware, Markham, 905-940-8358
 - .6 Remac Door and Hardware, Mississauga, 905-677-3100
 - .7 Allmar Distributors, Concord, 905-737-4700
 - .8 Group 87, Burlington, 905-639-4676
 - .9 Brunet Goulard Les Agenci, Nepean, 514-392-2555.
- .5 Keying:
 - .1 Provide permanent **7-pin removable core cylinders by Best Locks. Supply Best permanent cores.**
 - .2 Permanent cores are to be turned over to the Owner who will complete final coring.

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- .3 Provide **brass only** construction cores for locks and cylinders for use during construction. Credit the Owner for return of construction cores.

2.2. ACCEPTABLE PRODUCTS

- .1 Products shall be those listed in the Door Hardware List appended to this Section.
- .2 Fastenings:
- .1 Provide screws, bolts, expansion shields and other fastening devices required for the satisfactory installation and operation of hardware, and as recommended by the hardware manufacturers for long life under hard use.
- .2 Exposed screws for installing hardware shall have Phillips or Robertson heads.
- .3 Exposed fastening devices shall match material and finish of hardware.
- .4 Where a pull is scheduled on one side of a door and a push plate on the other, provide fastening devices so that the pull can be installed from the reverse side and the push plate will cover the fasteners.
- .5 Install door closers with through-bolt mounting.

PART 3: EXECUTION

3.1. PREPARATION

- .1 Provide instructions required for preparation of doors and frames, including strike heights listed in table below, to the appropriate fabricators.
- .2 Work of this Section shall include assistance and supervision of installation when requested, and as otherwise provided by the supplier, to ensure correct installation.

3.2. 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 plumb and level to permit proper engagement and operation of hardware.
- .3 Submit to Consultant and Contractor, in writing, a list of any deficiencies found during examination. Deficiencies are to be corrected prior to installation of hardware.

3.3. INSTALLATION

- .1 Power door operators to be installed by hardware supplier. Provide all low voltage control wiring to push button locations, exit device release. 102mm x 120mm back boxes and all conduit to be provided by Division 26 (Electrical Contractor).
- .2 Locate and mount hardware at standard location dimensions in accordance with CSDFMA, Canadian Metric Guide for Steel Doors and Frames (Modular Construction), and as indicated in the following table:

HARDWARE MOUNTING HEIGHTS	
HARDWARE ITEM	DIMENSION ABOVE FINISHED FLOOR
LOCKSET or LATCHSET	1024mm to Centreline of Strike
DEADLOCK	1200mm to Centreline of Cylinder
EXIT DEVICE	950 to Centreline of Strike
PUSH PLATE / DOOR PULLS	1060mm to Centreline of Plate or Pull

- .3 Accurately locate and adjust hardware to meet manufacturer's instructions. Use special tools and jigs as recommended.
- .4 Locate door stops to contact doors 75 mm from latch edge.
- .5 Install hardware and trim square and plumb to doors.
- .6 Replace wrappings for hardware provided by manufacturer after installation.
- .7 Safeguard keys to keep them out of unauthorized hands, tag them with door number, and deliver them to person designated by Architect at building completion.

3.4. ADJUSTING & VERIFICATION

- .1 Verify under work of this Section that installed hardware functions properly and adjust accordingly to ensure satisfactory operation.
- .2 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 manufacturer's instructions.
- .3 Inspect fire rated openings and verify that hardware is in compliance with NFPA 80 requirements.
- .4 In Owner's presence, test access control system and electrified hardware devices to verify proper operation. Verify electric door release operation upon activation of the fire alarm system. Obtain Owner sign-off on verification and submit copy to Consultant.
- .5 Perform a minimum of bi-monthly on-site inspections during hardware installation and provide reports listing the progress of the work, unacceptable work and corrective measures. Repair or replace defective work as directed by the Consultant.
- .6 Before completion of the work but after the hardware has been installed, submit a certificate to the Consultant verifying that a final inspection of the hardware has been made by a technician from the manufacturer and the Architectural Hardware Consultant.
- .7 Coordinate with the Owner's Hardware Inspector and perform a final inspection of the work. Correct any deficiencies noted by the Hardware Inspector.

3.5. CLEANING

- .1 Remove wrappings and protection from hardware at completion of the Project and clean hardware in accordance with manufacturer's instructions.

3.6. FINAL DOCUMENTATION

- .1 The hardware supplier shall provide hardware close-out documentation to the Contractor for inclusion in maintenance manuals.

END OF FINISH HARDWARE

Holly Meadows ES
151 Mapleton Avenue, Barrie, Ontario

Job No. 22583

Architect

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22 Blake Street
Barrie, Ontario

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Submittal Date: **April 12, 2021**



Upper Canada Specialty Hardware
7100 Warden Ave. Unit 1
Markham, Ont., L3R8B5

Holly Meadows ES
151 Mapleton Avenue, Barrie, Ontario
Job No. 22583

Submittal Date: April 12, 2021

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	E9-1	EXTERIOR	FROM	VESTIBULE	RHR	893	2183	45	AL	AL	
002	1	E9-2	EXTERIOR	FROM	VESTIBULE	RHR	893	2183	45	AL	AL	
003	1	E9-3	VESTIBULE	FROM	CORRIDOR	RHR	915	2135	45	AL	AL	
004	1	E9-4	VESTIBULE	FROM	CORRIDOR	RHR	915	2135	45	AL	AL	
005	1	MISC-1								-	-	



Upper Canada Specialty Hardware
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Holly Meadows ES
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Job No. 22583

Submittal Date: April 12, 2021

Hardware Schedule

Heading #001

1 Single door E9-1, EXTERIOR FROM VESTIBULE

RHR

893 x 2183 x 45 - AL DR x AL FR

CONFIRM DOOR THICKNESS

4	Standard Hinge	LH1399CB 114 x 101 NRP C32D (4 Hinges Per Leaf)	C32D
1	Cylinder	1E72(Std.) 626	626
1	Construction Core	Construction Core	
1	Exit Device	31-8504 F L/Trim RHR LC C32D 893 Door	C32D
1	Door Pull	GSH 1180-2 #4B Mtg C32D	C32D
1	Surface Closer	4040XP EDA TB AL	AL
1	Mounting Plate	4040XP-18PA AL	AL
1	Spacer	4040XP-61 AL	AL
1	Overhead Door Stop	104S C32D (110°)	C32D
1	Threshold	CT-46 x 900	
1	Weatherstripping	Weatherstrip - By Aluminum Door Supplier	
1	Door Sweep	W-24S-CA x 900	CA



Upper Canada Specialty Hardware
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Holly Meadows ES
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Submittal Date: April 12, 2021

Heading #002

1 Single door E9-2, EXTERIOR FROM VESTIBULE

RHR

893 x 2183 x 45 - AL DR x AL FR

CONFIRM DOOR THICKNESS

4	Standard Hinge	LH1399CB 114 x 101 NRP C32D (4 Hinges Per Leaf)	C32D
1	Electric Strike	9600-630-LBM	630-LBM
1	Power Supply	Power Supply - Existing Reused	
1	FOB Reader	FOB Reader - Existing To Remain	
1	Exit Device	31-8510 F RHR C32D 893 x 2183 Door	C32D
1	Door Pull	GSH 1180-2 #4B Mtg C32D	C32D
1	Auto Door Operator	Auto Door Operator - Existing Reused	
2	Push Button	Push Button - Existing Reused	
1	Switching Network	Switching Network - Existing Reused	
1	Auto Door Operator	Auto Door Operator - Remove & Reinstall By Auto Operator Tech	
1	Overhead Door Stop	104S C32D (90°)	C32D
1	Threshold	CT-46 x 900	
1	Weatherstripping	Weatherstrip - By Aluminum Door Supplier	
1	Door Sweep	W-24S-CA x 900	CA

Heading #003

1 Single door E9-3, VESTIBULE FROM CORRIDOR

RHR

915 x 2135 x 45 - AL DR x AL FR

4	Standard Hinge	LH1368CB 114 x 101 C26D (4 Hinges Per Leaf)	C26D
1	Door Pull	GSH 1180-2 x 1180-2 B to B C32D	C32D
1	Surface Closer	4040XP EDA TB AL	AL
1	Mounting Plate	4040XP-18PA AL	AL
1	Spacer	4040XP-61 AL	AL
1	Overhead Door Stop	104S C32D (110°)	C32D

Heading #004

1 Single door E9-4, VESTIBULE FROM CORRIDOR

RHR

915 x 2135 x 45 - AL DR x AL FR

4	Standard Hinge	LH1368CB 114 x 101 C26D (4 Hinges Per Leaf)	C26D
1	Door Pull	GSH 1180-2 x 1180-2 B to B C32D	C32D
1	Auto Door Operator	Auto Door Operator - Existing Reused	
2	Push Button	Push Button - Existing Reused	
1	Auto Door Operator	Auto Door Operator - Remove & Reinstall By Auto Operator Tech	
1	Overhead Door Stop	104S C32D (90°)	C32D

Heading #005

1 Elevation MISC-1

___ x ___ x ___ - - DR x - FR

2	Cut Keys	Control Keys
2	Cut Keys	Operating Keys



Upper Canada Specialty Hardware
7100 Warden Ave. Unit 1
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Holly Meadows ES
151 Mapleton Avenue, Barrie, Ontario
Job No. 22583

Submittal Date: April 12, 2021

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. SCOPE OF WORK

- .1 Furnish all labour, materials, and equipment necessary to supply and install glazing in wood and hollow metal doors and screens as indicated on drawings and specified herein.

1.3. RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 06200: Finish Carpentry
- .2 Section 08100: Hollow Metal Doors and Frames
- .3 Section 08200: Wood Doors
- .4 Section 08520: Aluminium Windows

1.4. REFERENCES

- .1 CAN/CGSB-12.1-M90: Tempered or Laminated Safety Glass.
- .2 CAN/CGSB-12.2-M91: Glass, Sheet, Flat, Clear.
- .3 CAN/CGSB-12.3-M91: Glass, Polished Plate or Float, Flat, Clear.
- .4 CAN/CGSB-12.5-M86: Mirrors, Silvered.
- .5 CAN/CGSB-12.8-97: Insulating Glass Units.
- .6 CAN/CGSB-12.11-M90: Wired Safety Glass.
- .7 CAN4-S104-M - Fire Tests of Door Assemblies.
- .8 CAN4-S106-M - Standard Method for Fire Tests of Window and Glass Block Assemblies.
- .9 Fixed Glass Manufacturers Association (FGMA): Glazing Manual.
- .10 Fixed Glass Manufacturers Association (FGMA): Glazing Sealing Systems Manual.
- .11 Insulated Glass Manufacturers Association of Canada (IGMAC): Quality Standard Specification.

1.5. SUBMITTALS

- .1 Submit Product data and Samples as specified in Section 01340.
- .2 Product Data on Glass Types Specified: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- .3 Samples: Submit duplicate samples, 300 x 300 mm in size, for each of the insulated sealed glass unit types, illustrating colour, thickness, and design.

1.6. QUALITY ASSURANCE

- .1 Conform to:
 - .1 FGMA Glazing Manual,
 - .2 IGMAC - Quality Standard Specification and Glazing Recommendations for Sealed Insulated Glass Units.
- .2 Fire Rated Glass: Each lite shall bear a permanent, non-removable label of Underwriters Laboratories certifying it for use in tested and rated fire protective assemblies.
- .3 Select glazing compounds and sealants to requirements of glass manufacturer's instructions.

1.7. WARRANTY

- .1 Submit extended warranties in accordance with the General Conditions of the Contract.
- .2 Extended Warranty: 10 year extended warranty covering sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

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- .3 Extended Warranty: 10 year extended warranty covering mirrors from reflective coating delamination or degradation.

1.8. DELIVERY, STORAGE AND HANDLING

- .1 Co-ordinate delivery of glazing to the site with the General Contractor in order to avoid any unnecessary delays in construction and to avoid damage due to excessive storage periods.
- .2 Handle glass with care and store on site as directed by the General Contractor.

PART 2: PRODUCTS

2.1. MANUFACTURERS

- .1 Manufacturers having Product considered acceptable for use:
 - .1 AFG Glass Inc.
 - .2 AGC Flat Glass North America.
 - .3 Libbey-Owens Ford.
 - .4 Pilkington Glass North America, Inc.
 - .5 PPG Industries.
 - .6 Guardian Industries Corp.
 - .7 Nippon Electric Glass Company, Ltd.
 - .8 Vetrotech

2.2. DESIGN CRITERIA

- .1 Glass and glazing materials of this Section shall provide continuity of building enclosure vapour and air barrier.
- .2 Fire rated glass and glazing materials of this Section shall provide required fire separations in doors and screens tested in accordance with CAN4-S104-M and CAN4-S106-M.
- .3 Size of glass to withstand dead loads and positive and negative live loads acting normal to plane of glass.
- .4 Limit glass deflection to 1/200 or flexure limit of glass with full recovery of glazing materials, whichever is less.

2.3. FLAT GLASS MATERIALS

- .1 Float Glass (**FG**): to CAN/CGSB-12.3-M; 6 mm thick, glazing quality.
- .2 Sheet Glass (**SG**): to CAN/CGSB-12.2-M; 3 mm thick, glazing quality.
- .3 Tempered Safety Glass (**TG**): to CAN/CGSB-12.1-M; clear float glass fully tempered horizontally to achieve a net strength of not less than 4 to 5 times greater than regular annealed glass; 6 mm thick.
- .4 Heat-Strengthened Glass (**HS**): to CAN/CGSB-12.1-M; clear float glass heat strengthened horizontally to achieve a net strength of not less than 2 times greater than regular annealed glass; 6 mm thick unless specified otherwise.
- .5 Fire Rated Ceramic Glass: "Firelite NT" or "Keralite F" (**LCG**) distributed by Technical Glass Products (Firelite) and Vetrotech (Keralite); 6 mm thick.
- .6 Mirror Glass (**M**): to CAN/CGSB-12.5-M; tempered safety glass; 6 mm thick minimum; polished edges wherever exposed.

2.4. SEALED INSULATING GLASS MATERIALS

- .1 Sealed Insulated Glass Units (Type **IG-1**): to CAN/CGSB-12.8; double pane with warm edge seal; as follows:
 - .1 Outer Pane: Clear heat-strengthened glass, with Type 1 Low-E coating on #2 surface;
 - .2 Inner Pane: Clear float glass;
 - .3 Interpane Space: minimum 90 percent Argon gas;
 - .4 Overall Thickness: 25 mm;
 - .5 Visible Light Transmittance: 69 percent;
 - .6 Visible Light Reflectance: 12 percent;
 - .7 Coefficient of Heat Transmission: K-Value for Winter Night Time = 1.65;

- .8 Shading Coefficient: 0.44;
- .9 Manufacturer's Name and Product: eg. Solarban 60 (2) Clear by PPG Industries, Inc.
- .2 Sealed Insulated Glass Units (Type **IG-2**): to CAN/CGSB-12.8; double pane with warm edge seal; as follows:
 - .1 Outer Pane: Clear tempered glass, with Type 1 Low-E coating on #2 surface;
 - .2 Inner Pane: Clear tempered glass;
 - .3 Interpane Space: minimum 90 percent Argon gas;
 - .4 Overall Thickness: 25 mm;
 - .5 Visible Light Transmittance: 69 percent;
 - .6 Visible Light Reflectance: 12 percent;
 - .7 Coefficient of Heat Transmission: K-Value for Winter Night Time = 1.65;
 - .8 Shading Coefficient: 0.44;
 - .9 Manufacturer's Name and Product: eg. Solarban 60 (2) Clear by PPG Industries, Inc.
- 2.5. GLAZING ACCESSORIES**
 - .1 Warm Edge Seal: polyisobutylene primary seal with a secondary seal comprised of either silicone, butyl, polysulphide or urethane, as recommended by sealed insulating glass unit manufacturer for each particular glazing application; eg. SuperSpacer by Edgetech.
 - .2 Low-E Coating, Type 1: sputtered coating; eg. PPG Solarban 60 Solar Control Low-E (Sputtered).
 - .3 Glazing Sealant: as specified in Section 07900.
 - .4 Setting Blocks: neoprene, 80-90 Shore A durometer hardness.
 - .5 Spacer Shims: neoprene, 50-60 Shore A durometer hardness.
 - .6 Glazing Tape: preformed butyl compound with integral resilient tube spacing device.
 - .7 Glazing Splines: resilient polyvinyl chloride extruded shape; black colour.
 - .8 Mirror Attachment Accessories: stainless steel clips.
 - .9 Mirror Adhesive: chemically compatible with mirror coating and wall substrate.
 - .10 Graphic Window Film: view control type, 914 mm roll width, minimum 98% UV blocking; etched glass-type appearance; eg. Decolite by Madico, Inc. or Fasara by 3M, pattern as selected by Consultant.
- PART 3: EXECUTION**
 - 3.1. INSPECTION**
 - .1 Prior to installation of glazing, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
 - 3.2. PREPARATION**
 - .1 Clean contact surfaces with solvent and wipe dry.
 - .2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
 - .3 Prime surfaces scheduled to receive sealant.
 - 3.3. EXTERIOR - WET/DRY METHOD (PREFORMED TAPE AND SEALANT)**
 - .1 Cut glazing tape to length and set against permanent stops, 5 mm below sight line. Seal corners by butting tape and dabbing with sealant.
 - .2 Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapour seal.
 - .3 Place setting blocks at quarter points with edge block no more than 150 mm from corners.
 - .4 Rest glazing on setting blocks and push against tape with sufficient pressure to attain full contact at perimeter of pane or glass unit.

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- .5 Install removable stops, with spacer strips inserted between glazing and applied stops, 6 mm below sight line.
 - .6 Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, but not more than 9 mm below sight line.
 - .7 Apply cap bead of sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.
- 3.4. INTERIOR - DRY METHOD (TAPE AND TAPE)**
- .1 Cut glazing tape to length and set against permanent stops, projecting 1.6 mm above sight line.
 - .2 Place setting blocks at one-third points with edge block no more than 150 mm from corners.
 - .3 Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
 - .4 Place glazing tape on free perimeter of glazing in same manner described above.
 - .5 Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
 - .6 Knife trim protruding tape.
- 3.5. MIRRORS**
- .1 Set mirrors with adhesive, applied to requirements of adhesive manufacturer's instructions.
 - .2 Additionally, secure mirrors in place with clips, anchored rigidly to wall construction.
 - .3 Place mirrors plumb and level.
 - .4 Install transparent mirrors with reflective coating on subject side.
- 3.6. ADJUSTING AND CLEANING**
- .1 Replace any defective, damaged or broken glass due to faulty setting, handling or storage.
 - .2 Remove glazing materials from finish surfaces.
 - .3 Remove labels after Work is complete.
 - .4 Clean glass and mirrors.
 - .5 Promptly clean up and remove from the premises all rubbish and surplus material resulting from the work of this section.
- 3.7. SCHEDULE**
- .1 Provide glazing for the following elements and components:
 - .1 Hollow metal doors and screens.
 - .2 Wood doors.
 - .3 Cabinetwork.
 - .4 Mirrors.
 - .5 Other glazing shown on Drawings and not covered in other Sections.
 - .2 Provide the following glass:
 - .1 Fire Rated Ceramic glass: **CG** generally at fire rated elements. Use **LCG** in doors and lower panels of screens and where impact resistance is required.
 - .2 Insulating glass (**IG-1**): where indicated on the Drawings.
 - .3 Tempered glass (**TG**) or Insulating Glass Units Type **IG-2** at doors and lower panels of screens and where indicated.
 - .4 Provide glass thickness indicated on the Drawings. Where no thickness is indicated, provide 6mm thick glass.
 - .5 Float glass (**FG**): where no specific glass type is indicated.

END OF GLASS AND GLAZING

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ROOM FINISH SCHEDULE

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PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. ROOM SCHEDULE INDEX

- .1 General Finish Notes and Materials Legend: below (2 pages)
- .2 Room Finish Schedule: as noted on drawings

1.3. RELATED WORK SPECIFIED ELSEWHERE

- .1 09250 GYPSUM BOARD
- .2 09300 TILE
- .3 09410 PORTLAND CEMENT TERRAZZO
- .4 09510 ACOUSTIC TILE CEILINGS
- .5 09650 RESILIENT FLOORING
- .6 09815 HIGH BUILD GLAZED COATINGS
- .7 09900 PAINTING
- .8 09920 INTERIOR REPAINTING

1.4. GENERAL FINISH NOTES

- .1 In addition to paint finishing indicated in the Room Finish Schedule, paint shall be applied to other materials as described in Section 09900 and as noted on the Drawings.
- .2 Refer to Door Schedule, Specifications, Drawings and Details for special conditions not indicated on this Schedule.
- .3 The ceiling material column on the Schedule indicates the material and the finish on it, if any. Where no ceiling is indicated, the finish indicated is to be applied to the underside of the structure above, including all framing members and exposed services.
- .4 Factory applied finishes and colours for manufactured items and materials such as louvers, aluminium window frames, prefinished metal panels and flashings and washroom partitions and accessories are stated in the relevant section of the Specification. Colours not specified will be chosen by the Consultant from samples submitted by the Contractor and from the Manufacturer's standard range unless specified otherwise.
- .5 All interior and exterior ferrous metal work exposed to view are to be painted. These items shall include, but are not limited to, the following: steel stairs, railings, guard rails, ladders, door frames, lintels, bollards, corner guards, gratings, pipe protection, shelf angles and bench supports.
- .6 The undersides of steel stairs are to be considered "ceilings" and painted accordingly. The undersides of steel portion of steel stairs and landings are to be painted the same colour as the remainder of the stair. The soffits are to be considered "ceilings" and painted accordingly.
- .7 Concrete floors that are scheduled to receive finishes such as waterproofing, rubber flooring, terrazzo, epoxy and resilient tile are not to be sealed. All others concrete floors are to be sealed.
- .8 All exterior ventilation hoods, ducts and piping are to be painted/repainted. Colour to be custom colour, Stelco 10,000 Series as selected by the Consultant.
- .9 All poured concrete walls are to be constructed in preparation for paint finish, unless noted to receive sandblasted finish. At locations where concrete walls meet adjacent walls of another material such as block or gypsum board, ensure that joints are straight and true to receive caulking and finish.

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- .10 Refer to drawings for extent of gypsum board bulkheads and ceilings. All bulkheads are to receive paint finish to match adjacent ceiling unless noted otherwise.
- .11 All recessed convectors, grilles, access panels, wall fin covers, exposed pipes, hangers, guardrails, ladders and miscellaneous metal other than specialty finishes or baked enamel finishes shall receive painted finish.
- .12 Doors to be finished per Door Schedule.
- .13 New materials to be painted are to be painted per Section 09900 PAINTING
- .14 Existing interior materials to be painted are to be repainted per Section 09920 INTERIOR REPAINTING.

1.5. MATERIALS LEGEND:

AL	Aluminium
ATC	Acoustic Tile Ceiling
CMU	Concrete Block
BRK	Brick
CAR	Carpet
CONC	Concrete
CT	Ceramic Tile
EJC	Expansion Joint Cover
EXIST	Existing Condition
EXP	Exposed
EPC	Exposed pre-cast concrete
FF	Factory Finish
GB	Gypsum Board
GBS	Gypsum Board Sheathing
HBGC	High Build Glazed Coating (Epoxy)
HM	Hollow Metal
HMP	Hollow Metal Panel
IAP	Insulated Aluminium Panel
IMP	Insulated Metal Panel
PT	Paint
PLAM	Plastic Laminate
RB	Resilient Base
RCP	Reflected Ceiling Plan
SS	Stainless Steel
STR	Structure
SVS	Sheet Vinyl Safety Flooring
VAR	Varnish
VCT	Vinyl Composition Tile
WD	Wood

END OF ROOM FINISH SCHEDULE

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. SCOPE OF WORK

- .1 Work Included:
 - .1 New gypsum board partitions, ceilings and bulkheads.
 - .2 Miscellaneous metal framing indicated on the drawings.

1.3. RELATED WORK

- .1 Section 07265: air barrier
- .2 Section 07200: thermal insulation
- .3 Section 07270: fire stopping
- .4 Section 07900: caulking (except concealed acoustic caulking)
- .5 Section 08100: supply of steel door frames
- .6 Section 09900: painting
- .7 Divisions 15 & 16: supply of access doors

1.4. FIRE PROTECTION REQUIREMENTS

- .1 Provide fire rated gypsum board components and assemblies as indicated on the Drawings.
- .2 Comply with the requirements of Section 01060.
- .3 Where fire hose cabinets, electrical panels or other fixtures or equipment are recessed into fire rated gypsum board partitions, provide fire rated backing to maintain the required fire rating.
- .4 Protect recessed fixtures in fire rated gypsum board ceilings in accordance with fire rated assembly design report and/or as indicated on the Drawings.
- .5 Gypsum bulkheads / partitions in ceiling spaces above fire rated glazed screens, doors or other elements shall have same fire rating as element over which they occur.

1.5. REFERENCES

- .1 Canadian Standards Association (CSA):
 - .1 A82.27-M91: Gypsum Board Products
 - .2 A82.31-M91: Gypsum Board Application

1.6. PRODUCT HANDLING AND STORAGE

- .1 Handle gypsum board panels to prevent damaged edges.
- .2 Store materials in dry place so as to preserve their quality and fitness for work.

1.7. JOB CONDITIONS

- .1 Install and finish gypsum board when ambient temperature is between 14 and 22 deg C. maintain this temperature range for 24 hours before and during application and until joint cement and adhesives are fully cured.
- .2 Apply gypsum board after building has been fully enclosed. Ensure that work to be concealed by gypsum board has been installed, tested, inspected and approved before starting work.

1.8. QUALITY ASSURANCE

- .1 Applicator Qualifications:
 - .1 Provide the work of this Section, executed by competent installers with minimum of 5 years experience in the application of products, systems and assemblies specified.

PART 2: PRODUCTS

2.1. FRAMING AND SUSPENSION COMPONENTS

- .1 Metal framing:
 - .1 Acceptable manufacturers include:
 - .1 Canadian Gypsum Company Ltd. (CGC)
 - .2 G-P Gypsum Corporation (Gyproc)
 - .3 Bailey Metal Products (BMP)
 - .2 Metal studs and runners: 25 gauge thick galvanized steel.
 - .3 Metal furring channels: 19mm galvanized steel hat shaped channels.

2.2. GYP SUM BOARD (GB) / GYP SUM BOARD SHEATHING (GB SHEATHING)

- .1 Acceptable manufacturers include:
 - .1 Canadian Gypsum Company Ltd.
 - .2 Domtar Construction Materials Ltd.
 - .3 Westroc Industries Ltd.
 - .4 G-P Gypsum Corporation.
- .2 Conform to CSA A82.27 –M1997 for gypsum board products.
- .3 **Gypsum board:** Provide 16mm thick **Type 'X' FIRE RATED** with tapered edges unless otherwise noted.
- .4 **Gypsum Board Sheathing:** 13mm Dens-Glass Gold or 16mm Dens-Glass Gold, fireguard by G-P Gypsum for fire-rated applications.

2.3. ACCESSORIES

- .1 Screws: corrosion-resistant drywall screws as recommended by gypsum board manufacturer.
- .2 Adhesive: CGC Durabond Compound or similar by other acceptable manufacturers.
- .3 Joint treatment for gypsum board: as recommended for the various applications by gypsum board manufacturer. Adhesive at all exterior applications.

2.4. TRIM ACCESSORIES

- .1 Soffit Vent: Model 'SV' Continuous Aluminium Soffit Vent by Stockton Products, PCS 625-200 by Flannery, Inc..
- .2 Corner bead: CGC Dur-a-Bead or BMP D-100.
- .3 Metal trim: CGC No.200-A or BMP D-4411 for "J" Mould. Do not provide "J" Mould unless specifically noted on the Drawings as 'Exposed "J" Mould'.

2.5. ACOUSTICAL MATERIALS

- .1 Isolators: Neoprene type, providing nominal deflection of minimum 6 mm under load of ceiling: Mason WHD by Vibrasonic or equivalent product by BVA or CDM type by Acoutherm.
- .2 Acoustic Insulation inside partitions and above ceilings: acoustic batt insulation per Section 07200.
- .3 Caulking: to CAN/CGSB-19.21-M87: Acoustical Sealant by Tremco, or CGC Acoustical Sealant.
- .4 Sound barrier membrane: dB-Bloc by Netwell Noise Control or equivalent.
 - .1 non-reinforced loaded vinyl barrier, 2.54 mm thick, 1lb/sf weight, 220 psi tensile strength, 140% elongation, -20°F – 180°F service temperature.

PART 3: EXECUTION

3.1. METAL FRAMING

- .1 General:
 - .1 Framing and furring indicated on the Drawings is schematic and is not to be considered exact or complete. Location and spacing of members, bracing, supports

- and securement shall be in accord with referenced standards as required to provide complete and finished work.
- .2 Comply with the recommendations of the CGC Steel Framed Drywall Systems folder 09260-1 E for metal stud partition detailing.
 - .3 Neatly frame around recessed fixtures and openings.
 - .4 Co-ordinate erection of framing with Divisions 15 and 16 to determine openings required. Neatly frame around services.
 - .5 Provide additional studs or furring channels secured between studs for attachment and support of the following:
 - .1 Access panels
 - .2 Miscellaneous specialties
 - .3 Fitments and fixtures
 - .4 Equipment
 - .2 Partitions:
 - .1 Unless specified or shown otherwise, extend steel studs to underside of structure above.
 - .2 Provide partition tracks at floor and underside of ceiling or structure above. Align accurately. Secure to supporting structure at 610 mm o.c. Layout to partition layout.
 - .3 Place studs vertically at 400mm o.c. unless otherwise specified, not more than 50mm from abutting walls, and at each side of openings and corners. Position studs in tracks. Cross brace studs as required to provide rigid installation.
 - .4 Stiffen partitions over 2400 mm in height at maximum 1500 mm with at least one 19 mm horizontal bracing channel extending full length of partition.
 - .5 Provide slip joint at top of partitions to accommodate deflection of structure without causing damage to partition.
 - .6 Provide double boxed studs at each side of openings to extend in one piece from floor to underside of structure above.
 - .7 Do not secure studs to exterior window framing, or to the ceiling grid members.
 - .3 Metal Furring:
 - .1 Erect furring in accordance with manufacturer's directions and as specified herein.
 - .2 Provide furring rigid, secure, square, level or plumb, framed and erected to maintain the finish dimensions and contours indicated.
 - .3 Furr around ducts, pipes, and dropped beams occurring in finished areas, and for vertical drywall breaks within or at termination of ceilings.
 - .4 Provide metal furring channels fastened to the masonry or concrete surfaces in parallel rows at 400mm o.c. unless gypsum board is indicated to be adhered directly to masonry or concrete surfaces. Shim metal furring channels to provide a level surface.
 - .4 Ceilings and Soffits:
 - .1 Erect suspension and furring system level with a maximum tolerance of +/- 3 mm over 3000 mm length.
 - .2 Suspension system shall support grillage independent of walls, columns, pipe and ducts. Space hangers at maximum 1220 mm o.c. along rough furring members and not more than 150 mm from ends. Do not place hangers in front of access panels.
 - .3 Space rough furring members at maximum 915 mm and not more than 150 mm from perimeter walls.
 - .4 Space furring channels transverse to runner channels at maximum 610 mm o.c. except at exterior soffits, and secure to each support with clip or saddle tie with 2 loops of tie wire. Install furring channels so as not to contact perimeter walls.
 - .5 Where ductwork, piping or other elements within ceiling spaces interfere with direct suspension of ceiling from structure, install additional framing securely fastened to main structure to accommodate proper hanging of ceiling.

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- .6 At exterior soffits install furring members at maximum 400 mm o.c. Suspend soffit framing with metal studs and brace system to withstand positive and negative wind forces without detrimental effects. Fasten furring members to surrounding walls. Install gypsum board sheathing, tape and finish with adhesive.
 - .5 Bulkheads, coves and furring
 - .1 Frame to profiles shown, rigid, square, true to line and securely fastened to supporting building elements.
 - .2 Space furring members to receive gypsum board at maximum 610 mm o.c.
 - .3 Provide rough framing and bracing as required to ensure stability and accuracy of the work.
 - .4 Where indicated, provide resilient furring channels, spaced at maximum 610 mm o.c.
 - 3.2. GYP SUM BOARD APPLICATION**
 - .1 Provide gypsum board in accordance with manufacturer's written installation instructions and CSA A82.31-M.
 - .2 Use Type 'X' gypsum board at fire rated elements.
 - .3 Use Gypsum Board Sheathing at all exterior applications.
 - .4 **Provide metal trim at junctions with all dissimilar materials.** Stop gypsum board 6 mm from abutting construction at dissimilar materials and finish floors. Provide reveals at junctions with dissimilar materials where indicated.
 - .5 Provide finished work plumb, level and true, free from perceptible waves or ridges and square with adjoining work.
 - .6 Cut and fit gypsum board to accommodate or fit around other parts of the Work. Provide the work of this Section accurately and neatly.
 - .7 Butt gypsum board sheets together in moderate contact. Do not force into place. Place tapered or wrapped edges next to one another.
 - .8 Provide gypsum board perpendicular to framing and in lengths that will span ceilings and walls without creating end (butt) joints. If butt joints do occur stagger and locate them as far from the centre of walls and ceilings as possible. Accurately fit exposed butt joints together and make edges smooth.
 - .9 Support ends and edges on framing.
 - .10 Fasten gypsum board to metal furring and metal studs with screws.
 - 3.3. METAL TRIM AND ACCESSORIES**
 - .1 Provide metal trim casing beads at reveals; at ceiling - wall intersections and partition perimeters; and at the intersection of dissimilar constructions such as gypsum board to concrete or gypsum board to window frames.
 - .2 Provide metal trim casing beads where gypsum board abuts against a surface having no trim concealing the junction.
 - .3 Provide metal trim casing beads where indicated on Drawings.
 - 3.4. JOINT TREATMENT -GYP SUM BOARD**
 - .1 Verify that board is firm against framing members and screw heads are properly depressed.
 - .2 Mix joint compound or ready-to-use compounds according to manufacturer's directions. Use pure, unadulterated, clean water for mixing. Permit mixed material to stand 30 minutes before using. Do not mix more material than can be used within 1 hour. Do not use set or hardened compound. Clean tools and equipment after mixing each batch.
 - .3 Use adhesive joint compound at all exterior applications.
 - .4 Tape and fill joints and corners in strict accordance with gypsum board manufacturer's printed instructions. Fill either manually, using hand tools of the trade, or by a mechanical taping and filling machine of proven efficiency.
 - .5 Remove plastic tape from control joints after finishing with joint compound.

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- .6 After final coats of filler have dried at least 24 hours, sand the surface lightly with No.00 sandpaper to leave it smooth, ready for decoration.
- .7 Provide the finished work smooth, seamless, plumb and true, flush and with square plumb neat corners.

3.5. DOOR FRAMES / ACCESS DOORS

- .1 Install access doors supplied by Division 15 and 16. Build doors into gypsum board elements flush and parallel to walls and securely fastened.
- .2 Install steel door frames occurring in gypsum board partitions. Follow installation requirements specified in Section 08100.

END OF GYPSUM BOARD

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TILE

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PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Conform to all applicable sections of Division 1.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 07900: Sealants

1.3. SUBMITTALS

- .1 Samples: Submit 300 x 300 mm sample panels of each tile type specified.
- .2 Maintenance Materials: Provide 2% additional matching tiles for maintenance purposes. Turn over to General Contractor and obtain receipt.
- .3 Maintenance Instructions: Submit TTMAC Maintenance Guide for incorporation into Operating and Maintenance Manual. Additionally, provide instructions for maintenance of each material, including cleaning and stain removal methods, and recommended cleaning solutions, polishes and waxes, as recommended by the material supplier.

1.4. QUALITY ASSURANCE

- .1 Perform work of this Section only by an applicator of recognized standing who has adequate plant, equipment, and skilled workers to perform it expeditiously, and is known to have been responsible for satisfactory applications similar to that specified during a period of at least five years and is a member in good standing with the Terrazzo, Tile and Marble Association of Canada.

1.5. PROJECT ENVIRONMENT

- .1 Install tile only when base surfaces and air temperatures have been maintained between 10°C and 21°C for 72 hours preceding installation, and will be so maintained during installation and until setting materials have cured.

1.6. WARRANTY

- .1 Manufacturer's Warranty: Provide adhesive manufacturer's labour and material replacement warranty naming Owner as beneficiary and covering defects and deficiencies as listed for a period of 5 years from date Work is certified as substantially performed.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Ceramic Tile: Unless noted otherwise, specifications are based on Olympia Tile products. Equivalent products from other manufacturers may be used if approved by Consultant.
 - .1 Floor tiles for level floors:
 - .1 Equivalent to Omnia Series by Olympia Tile
 - .2 30 x 30 cm matte finish tile
 - .3 Include 100 mm high wall BULLNOSE base tiles for all wall edges
 - .4 Conform to the following tests:
 - .1 Water Absorption: ISO 10545-3
 - .2 Coefficient of friction: ASTM C-1028
 - .3 Bending Strength: ASTM C-648
 - .4 Deep Abrasion Resistance: ISO 10545-6
 - .5 Chemical Resistance: ISO 10545-13
 - .6 Frost Resistance: ISO 10545-12
 - .2 Floor Base tile: 100mm x 300mm x 6mm bull-nosed tile of same product line as floor tiles.
 - .3 Wall Tile:
 - .1 Equivalent to Colour & Dimension Collection glazed wall by Olympia Tile
 - .2 Large tile: bright glazed, 10 x 60 cm
 - .3 Small tile: bright glazed, 75mm x 152mm

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- .4 Conform to the following tests:
 - .1 Water Absorption: ISO 10545-3
 - .2 Slip Resistance: DIN 51130/61097
 - .3 Dynamic C.O.F.: ASTM C-1028
 - .4 Chemical Resistance: ISO 10545-13
 - .5 Frost Resistance: ISO 10545-12
 - .6 Stain Resistance: ISO 10545-14
 - .7 Bending / Breaking Strength: ISO 10545-4
- .2 Primer: To meet specified requirements of adhesive manufacturer.
- .3 Mortar: Thin Set Mortar, Laticrete 4237, latex thin-set mortar system, mixed with Laticrete 211 Crete Filler Powder, by Laticrete International Inc. Mortar shall conform to ANSI A 118.4.
- .4 Grout: Premixed, dry-set, portland cement grout with Laticrete latex 1776 additive, to later colour selection by Architect.
- .5 Floor Transition Strips: Schluter Reno-Ramp AERP 100 B65.
- .6 Wall Transition Strips: Schluter Schiene-Basic.
- .7 Pre-fabricated Movement Joints: purpose made, having a Shore A Hardness not less than 60 and elasticity of plus or minus 40% when used in accordance with TTMAC Detail 301MJ-2002.
- .8 Joint Sealant: as specified under Section 07900.
- .9 Sealer: to CAN/CGSB-25.20, Type 2; as recommended by tile manufacturer.
- .10 Cleaner: To conform to #1000 Series of Terrazzo, Tile and Marble Association of Canada.

PART 3: EXECUTION

3.1. INSPECTION

- .1 Verify existing conditions are ready to receive the work.
- .2 Ensure substrate surfaces are clean, dimensionally stable, cured and free of contaminants such as oil, sealers and curing compounds.
- .3 Ensure that concrete has been allowed to cure for a minimum of 28 days.
- .4 Ensure concrete floors scheduled to receive thin-set applied tile are steel troweled to a fine broom finish. Ensure concrete slabs have been finished with a maximum permissible variation of 6 mm in 3050 mm from the required plane and not more than 2 mm in 305 mm when measured from the high points in the surface.
- .5 Defective work resulting from application to unsatisfactory surfaces will be considered the responsibility of those performing the work of this Section. Beginning of installation implies acceptance of existing conditions.

3.2. PREPARATION

- .1 Protect surrounding work from damage or disfiguration.
- .2 Thoroughly clean surfaces that are to receive tile finish to ensure the removal of all grease, oil or dust film.
- .3 Apply a latex cementitious leveling coat wherever a slight substrate irregularity exists. Limit leveling coat thickness to less than 8 mm where thin-set methods are to be used.

3.3. INSTALLATION METHODS

- .1 The following installation methods refer to Terrazzo, Tile and Marble Association of Canada's Tile Installation Manual 2002.
- .2 Install floor tile by method specified in Detail No. 311F-2002, with Thin Set Mortar and dry-set latex modified grout.
- .3 Install wall tile by method specified in Detail No. 303W-2002
- .4 Grout tile joints in accordance with grout manufacturer's directions and to fill joints solidly. Caulk around all pipes and openings made in ceramic tile, with Sealant Type 2.

3.4. APPLICATION

- .1 General:
 - .1 Install tile in accordance with specifications prepared by the Terrazzo, Tile and Marble Association of Canada which are contained in their Tile Installation Manual 2002.
 - .2 Install transition strips at all exposed tile edges at junctions with dissimilar materials.
 - .3 Fit tile units around corners, fitments, fixtures, drains and other built-in objects to maintain uniform joint appearance.
 - .4 Make cut edges smooth, even and free from chipping. Do not split tile.
 - .5 Lay out tiles according to drawings and patterns so that perimeter and all cut tiles are no less than half size.
 - .6 Prior to installation ensure that the back of each tile is free of contaminants.
 - .7 For tile with raised or textured backs, bonding material must be evenly dispersed and pressed into the back of the tile to ensure a minimum of 95% coverage. Set tile in place while bond coat is wet and tacky, prior to skimming over. Notch bond coat in horizontal, straight lines and set tile on the freshly set bonding material while moving tile back and forth at 90° to the notches. Ensure corner and edges are fully supported by bonding material. Avoid lippage.
 - .8 Clean excess bonding material from surface prior to final set.
 - .9 Sound tiles after setting materials have cured and replace hollow sounding tiles before grouting.
 - .10 Keep two-thirds of the depth of grout joints free of setting material.
 - .11 Protect exposed edges of floor tile with appropriately sized transition strips.
 - .12 Lay tile on vertical surfaces with joints plumb and level.
 - .13 Cut and grind tile accurately, and without damage, to fit openings, and at intersections and against trim finish. Rub exposed cut edges smooth with abrasive stone.
 - .14 Drill tile for hardware and for pipes where possible. Otherwise at pipes and fittings, fit tile closely so that escutcheons cover cuts.
 - .15 Joints shall be 1.6 mm wide between ceramic tile units, 3 mm wide between porcelain tile units.

3.5. CONTROL & MOVEMENT JOINTS

- .1 Install control joints and expansion joints in accordance with TTMAC Detail 301MJ-2002. Install 6 mm tile control joints in otherwise unbroken expanse of tile at between 3600 mm and 4800 mm maximum in both directions.
- .2 Install control joints over joints in concrete or masonry. Form by temporarily blocking out the joint as the work proceeds, extending clear through the tile setting bed. Unless indicated otherwise control joints shall be 6mm wide.
- .3 Install control joints at perimeter of tiled areas, at junction of horizontal and vertical surfaces.
- .4 Install control joints at T-shaped, L-shaped or angled layout transitions.
- .5 Install movement joints in strict accordance with joint manufacturer's typical installation method for the tile application.
- .6 Co-ordinate this work with Section 03300.

3.6. GROUTING

- .1 Allow proper setting time prior to grouting.
- .2 Force grout into joints to ensure dense finish.
- .3 Remove excess and polish with clean cloths.

3.7. REPAIR

- .1 Before Project completion; remove and replace defective, damaged, loose and un-bonded tile; remove and replace grout in defective joints.

3.8. TOLERANCES

- .1 Set and level tile flush with adjacent tile.

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3.9. CLEANING

- .1 Wash glazed tile surfaces with water. Do not use muriatic acid for cleaning unless other methods fail, and only in a 5% solution followed by a drenching rinse of water and when directed by Architect.
- .2 Apply floor sealer to grout joints in accordance with manufacturer's instructions.
- .3 Clean or replace adjacent materials, including work of other trades damaged or soiled caused by the work of this Section.

3.10. PROTECTION

- .1 Prevent traffic and work on newly laid floors by barricading until work has set, a minimum of 10 days.
- .2 After materials have set, and until Project completion, coordinate the work to ensure that floors are not damaged by traffic.
- .3 At completion of tile flooring installation, install floor protection in areas where work is proceeding and traffic will occur. Lap joints of material by 150 mm and seal with non-asphaltic tape.

END OF TILE

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 Division 15: Mechanical Items Installed in Ceiling System
- .2 Division 16: Electrical Items Installed in Ceiling System

1.3. SCOPE OF WORK

- .1 Furnish all labour, materials and equipment necessary to supply and install suspension grid system complete with hangers, tie wire, fastenings, and hold down clips as indicated on drawings and specified herein.
- .2 Furnish all labour materials and equipment necessary to supply and install mineral acoustic ceiling tiles as indicated on drawings, room finish schedules and as specified herein.

1.4. SUBMITTALS

- .1 Submit duplicate 600mm x 600mm square samples of each type of mineral acoustic ceiling tile to be used in this project for the Consultant's review.
- .2 Submit for Consultant's approval, prior to ordering of materials, labelled samples of main tee and cross tee grid members, indicating manufacturer's name and product code or number.
- .3 Maintenance Materials: Provide 2% additional matching ceiling tiles for maintenance purposes. Turn over to General Contractor and obtain receipt.

1.5. QUALITY ASSURANCE

- .1 Suspension grid system and acoustic ceilings to be installed by fully qualified workmen and in strict accordance with system manufacturers printed instructions to produce a first class installation.
- .2 Suspension grid system to be installed by an approved subcontractor who is to assume complete responsibility for levelling the system.

1.6. REFERENCES

- .1 The following standards and criteria to serve as minimum guidelines for materials and installation of all acoustical work covered for this section:
 - .1 CAN/CGSB-92.1-M89: Sound Absorptive Prefabricated Acoustical Units
 - .2 ASTM C636 / C636M - 13: Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
 - .3 ULC Design No. I211 or equivalent tested and approved assembly: **for all ceiling designated to have a 1hr fire resistance rating**, unless indicated otherwise.

1.7. DELIVERY, STORAGE AND HANDLING

- .1 Materials to be delivered to job site in undamaged original factory wrappings and stored in a dry, weatherproof, heated location as directed by Contractor.
- .2 Do not deliver materials to the site until the building is ready for the installation of this material.

1.8. PROJECT ENVIRONMENT

- .1 Permit wet work to dry prior to commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20-40% before, during and after installation.
- .3 Store materials in work area 48 hours prior to installation.

1.9. CO-ORDINATION

- .1 Co-ordinate installation of suspension grid system with mechanical and electrical trades in order to obtain proper locations of electrical fixtures and air distribution grilles.
- .2 It is the intent that all fixtures, grilles, vents, etc. are to be symmetrically located in the ceiling layout, unless otherwise indicated.

PART 2: PRODUCTS

2.1. ACCEPTABLE MANUFACTURERS

- .1 This portion of the specification has been prepared on the basis of using suspension grid system and mineral acoustic ceiling tiles by Armstrong World Industries Canada Ltd.

2.2. MATERIALS

- .1 Hanger Wire: 2.5mm diameter galvanized steel wire.
- .2 Cold Rolled Steel Channels: 1.7mm thick, 38mm deep, with 14mm wide flanges.
- .3 Grid System: Exposed fire rated grid system. This portion of specification is based on use of Bailey Metal products. Equivalent products by Donn Canada or Chicago Metallic will be acceptable.
 - .1 Grid system shall be double web design, 38mm (1 1/2") high, heavy duty fire rated Lance-Lock System 1800, with rectangular top bulb and exposed 24mm flange with rolled cap.
 - .2 Angle edge trim shall be standard item by system supplier, 19mm wide flange with rolled cap.
 - .3 All of above shall be cold rolled zinc coated steel finished with baked-on low sheen white enamel.
- .4 Acoustic Tile: Shall be 610mm x 1220mm x 16 mm thick, **1hr fire rated**, mineral acoustic tile with white finish. Use **CGC "Radar"** panels (rectangular).
- .5 Hold Down Clips: Formed from spring steel, 27mm high x 16mm wide x 0.4mm thick, placed as required in Part 3.3 following.
- .6 Light Fixture Yoke: 1.6mm painted steel channels
- .7 Light Fixture Protection Box: Five-sided light fixture protection box, made from 16mm thick acoustic material and measuring 600mm x 1200mm x approx 150mm, assembled with 63mm common nails, spaced 125mm o.c., toe-nailed alternately at 45 degree angles.
- .8 Accessories: To include splices, clips, wire ties, retainers and miscellaneous moulding, to complement suspension system components, as recommended by system manufacturer.

PART 3: EXECUTION

3.1. INSPECTION

- .1 Prior to installation, carefully inspect the installed work of all other trades and verify that such work is complete to the point where the installation of acoustical treatment may properly commence.
- .2 Do not erect ceiling suspension until work above ceiling has been properly inspected by Consultant.

3.2. PREPARATION

- .1 Supply hangers and inserts to support the grid in time to be installed into structural system if required.
- .2 Commence installation after the building has been totally enclosed and dust generating activities have been completed. Do not commence work in areas where glazing is incomplete or concrete is not thoroughly dry.
- .3 Walls shall at least have been prime coated and mechanical and electrical rough-in work completed before proceeding with installation of acoustic tile.

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ACOUSTIC TILE CEILINGS

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- .4 Co-ordinate acoustic work with mechanical and electrical plans to ensure proper locations of diffusers, grilles, fixtures, etc. Suspension of mechanical and electrical items shall be responsibility of mechanical and electrical trades.
- 3.3. INSTALLATION OF CEILINGS**
- .1 Suspension system for acoustic ceilings shall be installed by experienced skilled personnel working for subcontractor who shall assume complete responsibility for levelling system. Install hangers in co-operation with General Contractor and other trades.
- .2 **At steel deck assemblies, do not attach hangers to steel decks.** Supply and install additional back-to-back cold rolled channels spanning between structural steel framing members as required for placement of hangers at 1220 mm o.c. and maximum 610 mm from walls. Where structural support exceeds 2400mm provide "Uni-Strut" ceiling support with extrusions at 1200mm O.C. complete with threaded rod support from structural members.
- .3 Suspension systems using exposed tee bar grid members to form a 610mm x 1220mm layout. Layout centreline of ceiling both ways, to provide balanced borders at room perimeter with border units not less than ½ tile dimension unless otherwise indicated on reflected ceiling plan.
- .4 Secure hangers firmly to lower chord of metal bar joists or to cold-rolled support channels attached to bar joists or bridging. Crimping of hanger or attachment of hanger to pipes and ducts will not be permitted. **Hangers must not exceed 5 degrees of plumb.**
- .5 Do not install hangers in front of equipment access panels.
- .6 Hang suspended grid system with hanger wires at approximately 1220 mm o.c. maximum both ways, maximum 610 mm from walls. Hangers and chains for light fixtures not to be in contact with mechanical systems. Secure hangers to main tees by looping end of hanger through hole in tees and tying end of hanger to its vertical suspension with minimum two twists.
- .7 Install cross tee sections at right angles and lock securely in place at intersection to provide a rigid assembly.
- .8 Install wall mouldings at junctions of ceiling and vertical surfaces. Butt joints neatly, square and true in alignment. Provide spring clips to produce tight installation.
- .9 Frame grid system at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights. Furr ceilings down around ducts, beams, bulkheads or other items as may be required.
- .10 Level entire grid system to provide flush finished surface in true planes and free from dropping, warped, or uneven joints. Finish grid system to be levelled to 1:1000. The suspension system to have maximum deflection of 1/360th spans.
- .11 Support light fixtures and diffusers with separate additional ceiling suspension hangers within 150mm of each corner and at maximum 600mm around perimeter of fixture.
- .12 Walls to be at least prime coated and mechanical rough-in to be completed prior to proceeding with installation of acoustic tile.
- .13 Carefully install acoustic ceiling tiles. Be responsible for all cutting and fitting of ceiling tiles around ducts, pipes, conduits, grilles, registers, diffusers, speakers, light fixtures, brackets, and similar items. Butt joints tight, terminate edges with moulding.
- .14 Provide hold down clips for all tile occurring within 4800mm of exterior doors and as required to meet fire rating indicated.
- 3.4. INSTALLATION OF FIRE RATED CEILINGS**
- .1 Where fire rated ceilings are indicated, install the ceiling system in strict accordance with the requirements of ULC Design No. I211 and as follows, unless indicated otherwise.
- .2 Install hanger wire attached to steel framing members at all four corners of light fixtures, at the intersection of members supporting acoustical tiles having duct outlets and at no more

than 1200 mm OC along main tees. Additional wires shall be attached at the centre of each 1500mm long cross-tee.

- .3 Install light fixture protection box over each light fixture.
- .4 Install light fixture yoke, secured to web of cross-tees supporting the light fixtures and located at the centre of each frame.
- .5 Install hold-down clips spaced over the cross-tees, one per 600mm length of tile.
- .6 Firestop flaps to be supplied and installed by Division 15.

3.5. ADJUSTING AND CLEANING

- .1 Touch up scratches, abrasions, voids, and other defects in painted surfaces to the approval of the Consultant.
- .2 Clean up and remove debris, caused by this construction after the completion of installation.

END OF ACOUSTIC TILE CEILINGS

PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. RELATED SECTIONS

- .1 Section 04200 - Masonry.
- .2 Section 07900 - Sealants.
- .3 Section 09250 - Gypsum Board.
- .4 Section 09300 - Tile.

1.3. REFERENCES

- .1 ASTM E84-13a: Standard Test Method for Surface Burning Characteristics of Building Materials.
- .2 ASTM F710-11: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- .3 ASTM F1066-04(2010)e1: Standard Specification for Vinyl Composition Floor Tile.
- .4 ASTM F1303-04(2009): Standard Specification for Sheet Vinyl Floor Covering with Backing.
- .5 ASTM F1861-08(2012)e1: Standard Specification for Resilient Wall Base.

1.4. SUBMITTALS

- .1 Submit samples in accordance with Section 01340.
- .2 Samples:
 - .1 Flooring: duplicate 300 x 300 mm size samples, illustrating colour and pattern selection for each flooring material specified.
 - .2 Base: duplicate 100 mm long samples, illustrating colour selection.
- .3 Submit manufacturer's maintenance instructions for inclusion into maintenance manuals specified in Section 01700.

1.5. EXTRA MATERIALS

- .1 Deliver to Owner on completion of work, and as he directs, 6 m2 or 3%, whichever is greater, of each resilient flooring Product, of each pattern and colour, in labelled packages identifying:
 - .1 Manufacturer's name,
 - .2 Product's name,
 - .3 Product colour and pattern.
- .2 Package tile products neatly in original containers, to prevent damage.
- .3 Supply roll goods in full width rolls.
- .4 Store roll goods in upright position, with roll wrapped in a protective cover to prevent damage.

1.6. DELIVERY, STORAGE, AND HANDLING

- .1 Deliver and store Products undamaged in original wrapping or cartons.
- .2 Store Products for a minimum of three days prior to installation in warm (not less than 18°C) dry room with tiles stacked not over four cartons high.

1.7. AMBIENT SITE CONDITIONS

- .1 Maintain ambient air temperature of 20 degrees Celsius three days prior to, during, and 48 hours after installation of flooring materials.
- .2 Do not lay flooring in conditions of high humidity or where exposed to cold drafts.
- .3 In hot weather, protect flooring from direct sunlight.

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- .4 Provide adequate ventilation.
- 1.8. WARRANTY**
- .1 Submit an extended warranty in accordance with the General Conditions of the Contract.
- .2 Extended Warranty: for a period of 10 years, covering against delamination of adhesive, and covering against curling, breakage, bubbling, discolouration, and excessive wear to flooring materials.
- PART 2: PRODUCTS**
- 2.1. MANUFACTURERS**
- .1 Manufacturers of vinyl composition tile having Product considered acceptable for use:
- .1 Flextile Ltd.
- .2 Armstrong World Industries.
- .3 Azrock by Tarkett.
- .2 Manufacturers of resilient base and trim having Product considered acceptable for use:
- .1 Armstrong World Industries.
- .2 Canada Base Company.
- .3 Johnsonite.
- 2.2. MATERIALS**
- .1 Vinyl Composition Tile (**VCT**): 305 x 305 mm size, 3.2 mm thick reinforced resilient vinyl, to ASTM F1066, Composition 1, Class 2; based on Armstrong Excelon VCT - Standard Patterns; field colour: Armstrong Excelon 51839, accent colours: multiple colours selected by Consultant.
- .2 Resilient Base (**RB**): thermoset vulcanized rubber, to ASTM F1861, Type TS, Style B - Cove; 100 mm high; 3 mm thick; complete with pre-moulded end stops and external corners; colour as selected by Consultant.
- .3 Reducer Strip: thermoset vulcanized rubber, smooth, purpose made to accommodate wheeled traffic and prevent tripping; tapered designs to suit nature of transition; colour as selected by Consultant.
- 2.3. ADHESIVES**
- .1 Adhesive for Vinyl Composition Tile: Ultrabond ECO 711 by Mapei.
- .2 Adhesive for Resilient Base: contact adhesive, water-based formulation; eg. Johnsonite 945.
- 2.4. ACCESSORIES**
- .1 Subfloor Filler: white premix latex; as recommended by flooring manufacturer to be compatible with materials of this Section.
- .2 Primers: waterproof; as recommended by flooring manufacturer.
- .3 Sealers and Wax: as specified in Section 01700.
- PART 3: EXECUTION**
- 3.1. EXAMINATION**
- .1 Before work commences to place the resilient flooring system, examine the areas to be covered and report any deficiency(s) or adverse condition(s) in writing to the General Contractor, Architect and Owner.
- .2 Verify surfaces designated to receive resilient base are even, smooth, free of gaps, holes and depressions.
- .3 Conduct all testing of concrete slabs to satisfy the requirements of the manufacturers.
- .4 Conduct additional tests as may be required by flooring manufacturers.
- 3.2. SUBSTRATE PREPARATION**
- .1 Conform to ASTM F710.

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- .2 Clean concrete substrate to remove deleterious matter which would impair adhesion of resilient flooring or sub-floor filler. Imperfections and irregularities (holes, voids, bumps, cracks, depressions, etc.) must be corrected, and surfaces must be smooth and even before the application of adhesive.
- .3 Prepare substrate to a smooth and flat surface, as follows:
 - .1 Remove sub-floor ridges and bumps by grinding or other means.
 - .2 Fill low spots, cracks, joints, holes, and other defects with sub-floor filler.
 - .3 Apply, trowel and float filler to leave smooth, flat, hard surface.
 - .4 Prohibit traffic until filler is cured.
 - .5 Vacuum clean substrate.
- .4 Prime substrate as and when recommended to ensure proper adhesion of finished flooring.
- 3.3. INSTALLATION**
 - .1 Install Products in accordance with manufacturer's installation guidelines.
 - .2 Do not proceed with placement of the adhesive and resilient flooring until surfaces and conditions comply with the manufacturers requirements indicated in each of the manufacturers' instructions and good work practices. **Adhesive and Resilient Flooring Manufacturer(s) to provide their acceptance in writing to General Contractor, Architect and Owner that the conditions are acceptable for installation.**
 - .3 Spread only enough adhesive to permit installation of materials before initial set.
 - .4 Set flooring in place, press with heavy roller to attain full adhesion.
 - .5 Lay flooring continuously from wall to wall in each area, **including beneath casework.**
 - .6 Terminate flooring at centre line of door openings where adjacent floor finish is dissimilar.
 - .7 Scribe flooring to walls, columns, floor outlets, and other appurtenances to produce tight joints.
 - .8 Tile Flooring
 - .1 Lay tile flooring with joints and seams parallel to building lines to produce symmetrical tile patterns.
 - .2 Provide perimeter tile of similar size within any given area.
 - .9 Resilient Base
 - .1 Install base on solid backing.
 - .2 Bond tight to wall and floor surfaces.
 - .3 Mitre internal corners.
 - .4 Use only pre-molded units at exposed ends and external corners.
 - .5 Scribe and fit to door frames and other interruptions.
- 3.4. FIELD QUALITY CONTROL**
 - .1 The Consultant will review the Work as specified in Section 01400.
 - .2 Consultant Inspection: will include careful review of flooring surfaces along flooring perimeters and at terminations to ensure a neat, well-bonded application.
 - .3 Make good flooring that exhibits improper or inadequate bond to substrate.
- 3.5. CLEANING**
 - .1 Clean floor and base surfaces to requirements of manufacturer's instructions.
 - .2 Seal and wax tile floors per flooring manufacturer's requirements.
- 3.6. PROTECTION**
 - .1 Protect finished floor until Substantial Performance of the Work by covering with a durable material or by keeping traffic off floor.

END OF RESILIENT FLOORING

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PART 1: GENERAL

1.1. REFERENCES

- .1 ASTM E84-95 Test Methods For surface Burning Characteristics of Building Materials.
- .2 ASTM D1052-97 Specification For Flexible Cellular Materials, Latex Foam.
- .3 CAN/CGSB 4.2 Textile Test Methods
- .4 CAN/CGSB 4.129-93 Carpets for Commercial Use
- .5 CAN/ULC-S101-M88 Standard Method of Fire Endurance Test of Building Construction Materials.
- .6 CAN/ULC-S102.2-M88 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies
- .7 CRI 104 Standard For Installation of Commercial Carpet
- .8 CRI TM 102 Fluorine Durability Level for Soil Resistance
- .9 IAQ Carpet Testing Program
- .10 AATCC 134-2001 Electrostatic Propensity of Carpet
- .11 AATCC 174-1998 Antimicrobial Activity Assessment of Carpets
- .12 AATCC 175-1998 Stain Resistance

1.2. SHOP DRAWINGS

- .1 Submit carpet tile layout drawings to Architect. Do not install carpet until seam layout drawings approved.

1.3. SAMPLES

- .1 Prior to ordering carpet tile, submit samples of carpet tile and accessories to Architect for approval, minimum 450 mm x 450 mm (18" x 18"), for each type and colour of carpet to be used.
- .2 Architect may take random samples of carpet tiles as installation progresses for comparison with approved samples. If, in opinion of Architect, such samples fail to meet standard of approved samples, remove tiles and replace with approved tiles as required at no cost to Owner.

1.4. MAINTENANCE DATA

- .1 Submit maintenance instructions in triplicate to Architect. Instructions shall give specific warning of maintenance or cleaning practices or materials which may damage carpeting.

1.5. TESTS REPORTS AND CERTIFICATES

- .1 Submit test reports to demonstrate compliance with CAN/ULC S102 and CAN/ULC S102.2.
- .2 Recycling: Submit certification and description of reclamation and recycling process to recycle recovered carpets.
- .3 Submit WHMIS MSDS Material safety Data Sheets acceptable to Labour Canada and Health and Welfare Canada for carpet adhesive. Indicate level of VOC content.

1.6. QUALITY ASSURANCE

- .1 Qualifications: Carpet shall be installed by firm of recognized standing having not less than 5 years proven experience in this type of work and having necessary equipment and skilled labour to carry out work satisfactorily.
- .2 Mock Up: In area designated by Architect, provide sample installation of each colour of at least 9 m² (100 sq ft) showing colour matching. Make changes as required until approved. When approved, sample area shall represent minimum acceptable standard for work. Remove sample installation when directed unless sample area can be satisfactorily incorporated into work.

1.7. DELIVERY, STORAGE AND HANDLING

- .1 Delivery: Deliver cartons of carpet tile to Site clearly tagged to show installation location.

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- .2 Storage: Store adhesive, carpet tapes and similar items in heated area maintained at minimum temperature of 10 deg C (50 deg F) or at such temperature as recommended by product manufacturer.
 - .3 Handling: Comply with adhesive and carpet manufacturer's directions for use of adhesive. Observe open time limits for adhesives and place lids on open cans when not being used. Under no circumstances contaminate or thin adhesives with water or solvents, unless specifically directed by manufacturer in writing.
- 1.8. WASTE MANAGEMENT**
- .1 Collect, separate and recycle waste materials.
 - .2 Place materials defined as hazardous or toxic in designated containers.
 - .3 Close and seal tightly, used sealant containers and store in designated containers in areas designated for hazardous materials.
 - .4 Collect, package and store carpet cut-offs and waste material for recycling and return to recycler in accordance with manufacturer's reclamation program.
- 1.9. PROJECT CONDITIONS**
- .1 Ensure substrate is within moisture limits prescribed by Manufacturer.
 - .2 Maintain Relative Humidity (RH) between 20 and 65% RH for 48 hrs before, during installation and 48 hrs after installation.
 - .3 Maintain temperature of not less than 18 C from 72 hrs before installation and 72 hrs after installation.
 - .4 Ventilation: Provide ventilation system in area to be carpeted to ensure adequate (min 1 air change each hour) extraction of VOC's or other contaminants. In occupied buildings, existing ventilation system may not be used for this purpose.
 - .5 Provide continuous ventilation during installation and for seven (7) days after completion of installation.
 - .6 Comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials.
- 1.10. MAINTENANCE**
- .1 Extra Materials: Deliver to Owner and store where directed, 5% of Carpet Tile suitably labeled in boxes.
- 1.11. WARRANTY**
- .1 Warrant work of this Section against defects and deficiencies for period of 5 years in accordance with General Conditions of the Contract. Promptly correct defects and deficiencies which become apparent within warranty period, to satisfaction of Architect and at no expense to Owner. Defects shall include, but not be limited to, buckling, bond failure, extensive colour fading and loss of more than 10% of pile fibre in any area. Damage due to improper cleaning or abnormal use is excepted from warranty.
- PART 2: PRODUCTS**
- 2.1. MATERIALS**
- .1 Carpet Tile: Provide tiles uniform in colour and texture, supplied from same dye batch, conforming to CAN/ULC-S101 and CAN/CGSB 4.129, having flame spread rating and smoke developed classification tested in accordance with CAN/ULC-S102.2-M for floor surface covering and certified by ULC or WH.
 - .1 Acceptable Manufacturers:
 - .1 Centura Tile
 - .2 Crossley Carpets Mills Limited (CAN)
 - .3 Interface Flooring Canada (US)
 - .2 For pricing purposes use Interface "Equation" carpet tile in a maximum of 2 colours to later selection by Architect from manufacturer's standard range.

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- .3 Carpet Tile to have the following minimum properties and characteristics:
 - .1 Fibre: 100% nylon fibre, antistatic;
 - .2 Yarn Construction: 2 or 3-ply, BCF construction;
 - .3 Method of colouration: space and/or solution dyed (min 50% solution dyed)
 - .4 Face Weight: min 814 g/m2 (24 oz);
 - .5 Gauge: min 1/10" gauge;
 - .6 Stitch Count: min. 10 per inch;
 - .7 Density: Canadian, min. 10.5 kilotex;
 - .8 Tile Size: min 450 x 450 mm (18 x 18);
 - .9 Carpet Backing: PVC, urethane, bitumen;
 - .10 Colour: From manufacturer's standard colour range, selections may be made by Architect at no extra cost to Owner;
- .4 Antimicrobial: to EPA requirements; Broad spectrum.
- .5 Static Control: < 2 kilovolts at 20% relative humidity and at 21 deg C (70 deg F).
- .6 Adhesive: Non-toxic, providing total Volatile Organic Compound (VOC) emission not exceeding 0.5 mg/m2 per hour. Vinyl-compatible, quick release adhesive as recommended by carpet manufacturer.
- .2 Tools: Paint roller and tray, seam roller, steel measuring tape, chalk line (use white chalk) and carpet knife.
- .3 Thresholds: Aluminum, screw-down type as recommended by carpet manufacturer, colours selected by Architect from manufacturers' standard range.
- .4 Resilient Base (RB):
 - .1 'Johnsonite Rubber Cove' by The Johnson Rubber Company Canada Limited or equivalent products from Amtico, Finercraft, Flexco. Base to be top set, standard toe, vinyl.
 - .2 Dimension: 100 mm high, 3.2mm gauge and including premoulded end stops and external corners.
 - .3 Colours to be a selected by the Consultant from standard ranges.

PART 3: EXECUTION

3.1. EXAMINATION

- .1 Examine work of other Sections affecting work of this Section and report any defects or discrepancies to Architect.
- .2 Commencement of installation shall constitute acceptance of substrates as satisfactory.

3.2. PREPARATION

- .1 Completely remove existing floor finish and adhesive from floor and dispose of in approved manner off site.
- .2 Floor shall be clean and free of cracks and protrusions. Remove dirt, paint, debris, grease, oil and loose toppings or finishes.
- .3 Fill gaps or cracks more than 2 mm (1/16") wide and minor depressions with Latex compound. Grind protrusions smooth.
- .4 Vacuum clean floors prior to installation.

3.3. INSTALLATION

- .1 General:
- .2 Commencement of Work: Refer to Drawings for areas where carpet is to be installed.
- .3 Installation: Install carpet and carpet tile in accordance with manufacturer's installation instructions. Install under all fitments and furniture to the perimeter of each room.

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- .4 Restriction of Traffic: Restrict traffic during installation. Upon completion of installation, do not allow traffic or movement of furniture onto carpet surface until installed area has been anchored at perimeter.
- .5 Carpet Tile:
 - .1 Measuring: Determine centre of room using standard tile-laying methods. Resulting quadrants should meet at right angles. Offsetting centre chalk line may become necessary to insure that perimeter tiles will be at least half-size or larger.
 - .2 Pile Direction: Install carpet tiles to achieve monolithic appearance with arrows on tile back pointing in same direction or as required by manufacturers' recommendation.
 - .3 Laying Out: To prevent movement of tiles during initial stages and to insure straight lines and square corners, create an anchor line by laying strips of adhesive alongside each centre chalk line. Lay tiles accurately and firmly along centre lines in selected quadrant. Additional tiles within quadrant should be installed by "stair-step" technique. In some cases, due to partitions, "starting" point is centre of the room. Carpet tiles are to be installed up to partitions, not under partition.
 - .4 Checking Tightness: Measure areas to insure tight installation. Measure over 11 tiles to attain cumulative space "gained" over 10 joints. The gain must not be greater than 6 mm (1/4"). Utilize this method in continual check of installation.
 - .5 Alignment: As tiles are butted against each other, frequently check at joints with your fingers to see that they are properly aligned. Do not install tiles that seem out of true more than 1.5 mm (1/32").
 - .6 Control Grid: To prevent tiles from shifting in larger areas, about every 6 m (20') to 9 m (30') both in length and width directions, anchor row of tiles. Use texturing paint roller to apply narrow strip of adhesive under "control" tiles.
 - .7 Joints: Take care when butting 1 tile against another. Avoid too much pressure on joining tiles as it will cause tiles to "peak" or "buckle". Face pile should be brushed back and tile "tipped" into place, to avoid any pile being caught in joint.
 - .8 Perimeter Tiles: Adhere to floor unless noted on Drawings. Lay last whole tile closest to wall and all perimeter cuts on adhesive. Perimeter cuts must then be accurately cut and tightly fitted against vertical fixed surface such as wall. In event of an open perimeter design, a fixed reducer strip anchored to floor is necessary to lock tile area in place.
 - .9 Cutting: Cuts are best made from back, whether using template for fitting around columns or at room perimeter. Activation of electrical floor outlets will follow carpet installation. Affected tiles must be surface-marked with tape.
 - .10 Trimming and Gluing: Whenever tile is cut or trimmed, it must always be adhered to floor.
- .6 Bases
 - .1 Fill cracks and level irregularities of surface to which base is applied with filler approved by adhesive manufacturer to provide solid backing over entire area behind base.
 - .2 Cement cove base to vertical surfaces so that gaps do not occur behind base, so that front lip of base cove bears firmly and uniformly on floor surfaces and so that good and permanent bond is produced between base and surface to which it is applied.
 - .3 Apply bases as shown complete with stops. Use pre-molded external and internal corners; mitre internal corners.
 - .4 Use full length pieces where practicable, accumulated short lengths not permitted.
 - .5 Butt joints and keep flush without gaps.

3.4. WASTE MANAGEMENT REQUIREMENTS

- .1 Comply with Government of Ontario Waste Management requirements.
- .2 Surplus tile and waste shall be accumulated daily and at completion of Work such materials shall removed to suitable recycling facility.

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- .3 Where Work of Contract is for replacement of existing carpet, carpet removed shall be shipped to suitable recycling facilities unless designated to be relocated.

3.5. CLEANING

- .1 Immediately following installation, inspection and approval of work by Architect, vacuum clean carpet using pile lifter and remove debris.

3.6. PROTECTION

- .1 Cover entire carpeted area with plastic covering held in place by masking tape at seams and stay-tacking around perimeter, if required by Architect.
- .2 Do not remove carpet protection until directed by Architect.
- .3 Work shall be handed over to Owner free of blemishes and in perfect condition.

END OF CARPET TILE

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PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 The General Conditions of the Contract CCDC 2,
 - .2 Section 00810, Supplementary Conditions CCDC 2,
 - .3 The Sections of Division 01.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 Read carefully all other Sections of the specifications to determine the extent of prime and finish coats applied by others.
 - .1 Section 01500 - Temporary Facilities and Controls (temporary heat, lighting, scaffolds, etc.)
 - .2 Section 05120 - Structural Steel and Steel Joists (shop primers and pre-finishing if applicable)
 - .3 Section 05315 - Metal Decking (shop coatings)
 - .4 Section 05500 - Miscellaneous Metal Fabrications (shop primers and pre-finishing if applicable)
 - .5 Section 06200 - Finish Carpentry (priming and finishing)
 - .6 Section 08210 - Wood Doors and Frames (pre-finishing)
 - .7 Section 09920 - Interior Repainting
 - .8 Division 15 - Mechanical (painting, stenciling, banding of mechanical systems)
 - .9 Division 16 - Electrical (painting, stenciling, banding of electrical systems)

1.3. SCOPE OF WORK

- .1 Section Includes: All labor, materials, tools and other equipment, services and supervision required to complete all exterior and interior painting and decorating work as indicated on Finish Schedules and to the full extent of the drawings and specifications.
- .2 Work under this contract shall also include, but not necessarily be limited to:
 - .1 Surface preparation of substrates as required for acceptance of painting, including cleaning, small crack repair, patching, caulking, and making good surfaces and areas to the limits defined under **MPI** preparation requirements.
 - .2 Surface preparation and prime painting surfaces for wall coverings prior to installation in accordance with **MPI** and wall covering manufacturer's requirements.
 - .3 Specific pre-treatments noted herein or specified in the **MPI** Architectural Painting Specification Manual.
 - .4 Priming (except where pre-primed with an approved primer under other Sections of work) and painting of structural steel, miscellaneous metal, ornamental metal and primed steel equipment.
 - .5 Priming and back-priming of wood materials as noted herein or specified in the **MPI** Architectural Painting Specification Manual.
 - .6 Painting of all semi-concealed areas (e.g. inside of light troughs and valances, behind grilles, and projecting edges above and below sight lines).
 - .7 Painting of roof vent flashings in accordance with the requirements of Section 07600.
 - .8 Painting of exposed to view mechanical (heating, ventilating and plumbing) services and equipment, e.g., ducts, sprinkler piping, etc., and electrical work to extent noted on Finish Schedule unless pre-finished.
 - .9 Re-painting of existing surfaces and finishes when adjacent to new painting work where applicable including surface preparation, prime and finish coats in accordance with **MPI** Repainting requirements.
 - .10 Provision of safe and adequate ventilation as required over and above temporary ventilation supplied by others, where toxic and/or volatile / flammable materials are being used.

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- .3 Refer to drawings and schedules (e.g., Finish Schedule) for type, location and extent of finishes required, and include all touch-ups and field painting necessary to complete work shown, scheduled or specified.
- 1.4. REFERENCES:**
- .1 The latest edition of the following reference standards shall govern all painting work:
- .1 Architectural Painting Specification Manual by the Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List. (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
- .2 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
- .3 National Fire Code of Canada.
- 1.5. QUALITY ASSURANCE:**
- .1 This Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested, Contractor shall provide a list of the last three comparable jobs including, name and location, specifying authority / project manager, start / completion dates and value of the painting work.
- .2 Only qualified journeypersons, as defined by local jurisdiction shall be engaged in painting and decorating work. Apprentices may be employed provided they work under the direct supervision of a qualified journeyperson in accordance with trade regulations.
- .3 All materials, preparation and workmanship shall conform to requirements of the latest edition of the Architectural Painting Specification Manual by the Master Painters Institute (MPI) (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
- .4 All paint manufacturers and products used shall be as listed under the Approved Product List section of the MPI Painting Manual.
- .5 All painting and decorating work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority and the local MPI Accredited Quality Assurance Association. The painting contractor shall notify the Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .6 All surfaces requiring painting shall be inspected by the Paint Inspection Agency who shall notify the Consultant and General Contractor in writing of any defects or problems, prior to commencing painting work, or after the prime coat shows defects in the substrate.
- .7 The painting contractor shall receive written confirmation of the specific surface preparation procedures and primers used for all fabricated steel items from the fabricator / supplier to ascertain appropriate and manufacturer compatible finish coat materials to be used before painting any such work.
- 1.6. REGULATORY REQUIREMENTS:**
- .1 Conform to the latest edition of Industrial Health and Safety Regulations issued by applicable authorities having jurisdiction in regard to site safety (ladders, scaffolding, ventilation, etc.).
- .2 Conform to requirements of local authorities having jurisdiction in regard to the storage, mixing, application and disposal of all paint and related waste materials. Refer to Waste Management and Disposal.
- .3 Notify the Paint Inspection Agency on award of contract and make application for assignment of an Inspector using appropriate forms supplied by the Agency as well as provide a copy of the project painting specification, drawings, color schedule and list of proposed materials for review purposes prior to commencement of work.

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- .4 Fully cooperate at all times with the requirements of the Paint Inspection Agency in the performance of their duties, including providing access and assistance as required to complete inspection work.
- 1.7. SAMPLES AND MOCK-UPS:**
- .1 When requested by the Consultant or Paint Inspection Agency, provide duplicate minimum 300 mm (12") square samples of surfaces or acceptable facsimiles requested painted with specified paint or coating in colors, gloss / sheen and textures required to MPI Painting Manual standards for review and approval. When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.
- .2 When requested by the Consultant or Paint Inspection Agency, prepare and paint designated surface, area, room or item (in each color scheme) to requirements specified herein, with specified paint or coating showing selected colors, gloss / sheen, textures and workmanship to MPI Painting Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.
- 1.8. SUBMITTALS:**
- .1 All submittals shall be in accordance with the requirements of Section 01340 – Shop Drawings.
- .2 Submit consent of surety with Bid Submission as proof of ability to supply a 100% two (2) year Maintenance Bond, if an MPI Accredited Quality Assurance Association's guarantee option is not used.
- .3 If requested, submit a list of all painting materials to the Consultant and the Paint Inspection Agency for review prior to ordering materials. If requested, provide an invoice list of all paint materials ordered for project work to Paint Inspection Agency indicating manufacturer, types and quantities for verification and compliance with specification and design requirements.
- .4 Submit two sets of Material Safety Data Sheets (MSDS) prior to commencement of work for review and for posting at job site as required.
- .5 If requested, submit work schedule for various stages of work when painting occupied areas for the Consultant's review and Owner's approval.
- .6 At project completion provide an itemized list complete with manufacturer, paint type and color coding for all colors used for Owner's later use in maintenance.
- .7 At project completion provide properly packaged maintenance materials as noted herein and obtain a signed receipt.
- 1.9. PRODUCT DELIVERY, STORAGE AND HANDLING:**
- .1 Deliver all painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and color designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.
- .2 Store all paint materials in original labeled containers in a secure (lockable), dry, heated and well ventilated single designated area meeting the minimum requirements of both paint manufacturer and authorities having jurisdiction and at a minimum ambient temperature of 45° F (7° C). Only material used on this project to be stored on site.
- .3 Where toxic and/or volatile / explosive / flammable materials are being used, provide adequate fireproof storage lockers and take all necessary precautions and post adequate warnings (e.g. no smoking) as required.
- .4 Take all necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) shall be stored in suitable closed and rated containers and removed from the site on a daily basis.

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- .5 Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.
- 1.10. SCHEDULING:**
- .1 Schedule painting operations to prevent disruption of and by other trades.
- .2 Schedule painting operations in occupied facilities to prevent disruption of occupants in and about the building. Painting shall be carried out on weekends in accordance with Owner's operating requirements. Schedule work such that painted surfaces will have dried before occupants are affected. Obtain written authorization from Consultant / Owner for changes in work schedule.
- 1.11. PROJECT / SITE REQUIREMENTS:**
- .1 UNLESS specifically pre-approved by the specifying body, Paint Inspection Agency and the applied product manufacturer, perform no painting or decorating work when the ambient air and substrate temperatures are below 50° F (10° C) for both interior and exterior work.
- .2 Perform no exterior painting work unless environmental conditions are within MPI and paint manufacturer's requirements or until adequate weather protection is provided. Where required, suitable weatherproof covering and sufficient heating facilities shall be in place to maintain minimum ambient air and substrate temperatures for 24 hours before, during and after paint application.
- .3 Perform no interior painting or decorating work unless adequate continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above minimum requirements for 24 hours before, during and after paint application. Provide supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
- .4 Perform no painting or decorating work when the relative humidity is above 85% or when the dew point is less than 5° F (3° C) variance between the air / surface temperature.
- .5 Perform no painting or decorating work when the maximum moisture content of the substrate exceeds:
- .1 15% for wood.
- .2 12 % for plaster and gypsum board.
- .6 Conduct all moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple cover patch test.
- .7 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .1 **Note:** Concrete and masonry surfaces must be installed at least 28 days prior to painting and decorating work and must be visually dry on both sides.
- .8 Apply paint only to dry, clean, properly cured and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.
- .9 Perform no painting or decorating work unless a minimum lighting level of 323 Lux (30 foot candles) is provided on surfaces to be painted or decorated. Adequate lighting facilities shall be provided by the General Contractor.
- 1.12. MAINTENANCE MATERIALS:**
- .1 At project completion provide 4 liters (1 gallon) of each type and color of paint from same production run (batch mix) used in unopened cans, properly labeled and identified for Owner's later use in maintenance. Store where directed.
- 1.13. WASTE MANAGEMENT AND DISPOSAL:**
- .1 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Obtain information on these controls from applicable Provincial government departments having jurisdiction.

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- .2 All waste materials shall be separated and recycled. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility. Materials that cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- .3 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .4 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:
 - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
 - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
 - .6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
- .5 Set aside and protect surplus and uncontaminated finish materials not required by the Owner and deliver or arrange collection for verifiable re-use or re-manufacturing.

1.14. GUARANTEE:

- .1 Furnish either the local MPI Accredited Quality Assurance Association's two (2) year guarantee, or, alternatively, a 100% two (2) year Maintenance Bond - both in accordance with MPI Painting Manual requirements. The Maintenance Bond shall warrant that all painting work has been performed in accordance with MPI Painting Manual requirements.
- .2 All painting and decorating work shall be in accordance with MPI Painting Manual requirements and shall be inspected by the local MPI Accredited Quality Assurance Association's Paint Inspection Agency (inspector), whether using either the MPI Accredited Quality Assurance Association's guarantee, or the Maintenance Bond option. The cost for such inspections, and for either the local MPI Accredited Quality Assurance Association's Guarantee, or the Maintenance Bond, shall be included in the Base Bid Price.
- .3 Painting and decorating Subcontractors choosing the Maintenance Bond option shall provide a maintenance bond consent from a reputable surety company licensed to do business in Canada. Cash or certified check are not acceptable in lieu of surety consent.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project. All such material shall be from a single manufacturer for each system used.
- .2 Other materials such as linseed oil, shellac, thinners, solvents, etc. shall be the highest quality product of an MPI listed manufacturer and shall be compatible with paint materials being used as required.
- .3 All materials used shall be lead and mercury free and shall have low VOC content where possible.
- .4 Where required, use only materials having a minimum MPI "Environmentally Friendly" E1 rating based on VOC (EPA Method 24) content levels.
- .5 Where indoor air quality (odour) is an issue, use only MPI listed materials having a minimum E2 rating.

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- .6 All paint materials shall have good flowing and brushing properties and shall dry or cure free of blemishes, sags, air entrapment, etc. Refer to 3.7, Field Quality Control / Standard of Acceptance requirements.
 - .7 Where required, paints and coatings shall meet flame spread and smoke developed ratings designated by local Code requirements and/or authorities having jurisdiction.
- 2.2. EQUIPMENT:**
- .1 Painting and Decorating Equipment: to best trade standards for type of product and application.
 - .2 Spray Painting Equipment: of ample capacity, suited to the type and consistency of paint or coating being applied and kept clean and in good working order at all times.
- 2.3. MIXING AND TINTING:**
- .1 Unless otherwise specified herein or pre-approved, all paint shall be ready-mixed and pre-tinted. Re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and color and gloss uniformity.
 - .2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.
 - .3 Where thinner is used, addition shall not exceed paint manufacturer's recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.
 - .4 If required, thin paint for spraying according in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.
- 2.4. FINISH AND COLORS:**
- .1 Unless otherwise specified herein, all painting work shall be in accordance with MPI Premium Grade finish requirements.
 - .2 Colors shall be as selected by the Consultant from a manufacturer's full range of colors. A Finish Schedule will be furnished after award of the Contract.
 - .3 Generally and unless otherwise specified herein or noted on Finish Schedules the quantity of colors and finishes shall be based on the following criteria:
 - .1 Exterior colors will be based on two (2) base colors and one (1) accent color with a maximum of two (2) deep or bright colors. No more than three (3) colors will be selected for the entire project. Note that this does not include pre-finished items by others, e.g. flashings, aluminum or vinyl windows, aluminum doors, etc.
 - .2 Interior colors will be based on five (5) base colors and three (3) accent colors with a maximum of three (3) deep or bright colors. No more than eight (8) colors will be selected for the entire project and no more than three (3) colors will be selected in each area. Note that this does not include pre-finished items by others, e.g. aluminum or vinyl windows, aluminum doors and handrails, etc.
 - .3 Interior colors and/or patterns shall be consistent with a maximum of three (3) separate schemes prepared.
 - .4 Ceilings (except those having a spray textured coating) shall be painted white.
 - .4 Except as noted herein or indicated on the Finish Schedule, interior walls and ceiling surfaces shall be painted in accordance with the following criteria over appropriate prime / sealer coat:
 - .1 all masonry surface areas (except as noted): washable latex with G5 (semi-gloss) finish.
 - .2 all gypsum board surface areas (except as noted): washable latex with G4 (satin) finish.
 - .3 laundry facilities / rooms, washrooms,: [washable latex with G5 (semi-gloss) finish.
 - .4 "clean" or "sanitary" areas such as food preparation and laboratory areas: epoxy (tile-like) G5 (semi-gloss) finish for dry surfaces.]

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- .5 Doors shall be painted a different color than door frames with walls a different color than either. Unless otherwise noted or scheduled all doors, frames and trim shall be painted using a G5 (semi-gloss) finish.
- .6 Access doors, prime coated butts and other prime painted hardware (e.g. door closers), registers, radiators and covers, exposed piping and electrical panels shall be painted to match adjacent surfaces (i.e. same color, texture and sheen), unless otherwise noted or where pre-finished.
- .7 Plywood service panels (e.g. electrical, telephone and cable vision panels) including edges shall be back-primed and painted to match painted wall mounted on.
- .8 The inside of light valances shall be painted gloss white.
- .9 The inside of all duct work behind louvers, grills and diffusers for a minimum of 460 mm (18") or beyond sight line, whichever is greater, shall be painted using flat black (non-reflecting) paint.
- .10 Low headroom areas shall be identified with minimum 100 mm (4") wide yellow band on leading edge marked "CAUTION _ LOW CLEARANCE" in 50 mm (2") high black letters at suitable intervals and/or in accordance with the requirements or authorities having jurisdiction.
- .11 Where other methods are not specified (i.e. applied material or nosings) and/or in accordance with the requirements or authorities having jurisdiction at stairs providing access and exit for persons with visual impairment, slip resistant paint shall be applied to handrails and treads. Slip resistant paint shall be of a contrasting color at tactile warning strips at stair treads and landings.

2.5. GLOSS / SHEEN RATINGS:

- .1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following MPI values:

GLOSS	DESCRIPTION	UNITS@ 60 DEGREES	UNITS@ 85 DEGREES
G1	MATTE OR FLAT FINISH	0 TO 5	10 MAX.
G2	VELVET FINISH	0 TO 10	10 TO 35
G3	EGGSHELL FINISH	10 TO 25	10 TO 35
G4	SATIN FINISH	20 TO 35	35 MIN.
G5	SEMI-GLOSS FINISH	35 TO 70	
G6	GLOSS FINISH	70 TO 85	
G7	HIGH-GLOSS FINISH	> 85	

- .2 Gloss level ratings of all painted surfaces shall be as specified herein and as noted on Finish Schedule.

PART 3: EXECUTION

3.1. CONDITION OF SURFACES:

- .1 Prior to commencement of work of this section, thoroughly examine (and test as required) all conditions and surfaces scheduled to be painted and report in writing to the Contractor and Consultant any conditions or surfaces that will adversely affect work of this section.
- .2 No painting work shall commence until all such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor and Inspection Agency.
- .3 Commencement of work shall not be held to imply acceptance of surfaces except as qualified herein. Such surfaces as concrete, masonry, structural steel and miscellaneous metal, wood, gypsum board and plaster, shall not be the responsibility of the Painting Subcontractor.
- .4 The Painting Subcontractor shall not be responsible for the condition of the substrate or for correcting defects and deficiencies in the substrate which may adversely affect the painting work except for minimal work normally performed by the Painting Subcontractor and as indicated herein. It shall always, however, be the responsibility of the Painting Subcontractor to see that surfaces are properly prepared before any paint or coating is applied.

3.2. PREPARATION OF SURFACES:

- .1 Prepare all surfaces in accordance with MPI requirements. Refer to the MPI Painting Manual in regard to specific requirements.
- .2 Sand, clean, dry, etch, neutralize and/or test all surfaces under adequate illumination, ventilation and temperature requirements.
- .3 Remove and securely store all miscellaneous hardware and surface fittings / fastenings (e.g. electrical plates, mechanical louvers, door and window hardware (e.g. hinges, knobs, locks, trim, frame stops), removable rating / hazard / instruction labels, washroom accessories, light fixture trim, etc. from wall and ceiling surfaces, doors and frames, prior to painting. Carefully clean and replace all such items upon completion of painting work in each area. Do not use solvent or reactive cleaning agents on items that will mar or remove finishes (e.g. lacquer finishes). Doors shall be removed before painting to paint bottom and top edges and then re-hung.
- .4 Protect all adjacent interior surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, etc., from painting operations and damage with drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
- .5 Substrate defects shall be made good and sanded by others ready for painting particularly after the first coat of paint. Start of finish painting of defective surfaces (e.g. gypsum board) shall indicate acceptance of substrate and any costs of making good defects shall be borne by the painter including re-painting of entire defective surface (no touch-up painting).
- .6 Confirm preparation and primer used with fabricator of steel items. Refer to Quality Assurance.

3.3. APPLICATION:

- .1 Do not paint unless substrates are acceptable and/or until all environmental conditions (heating, ventilation, lighting and completion of other subtrade work) are acceptable for applications of products.
- .2 Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.
- .3 Apply paint and decorating material in a workmanlike manner using skilled and trade qualified applicators as noted under Quality Assurance.

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- .4 Apply paint and coatings within an appropriate time frame after cleaning when environmental conditions encourage flash-rusting, rusting, contamination or the manufacturer's paint specifications require earlier applications.
- .5 Painting coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendations.
- .6 Tint each coat of paint progressively lighter to enable confirmation of number of coats.
- .7 Unless otherwise approved by the painting inspection agency, apply a minimum of four coats of paint where deep or bright colors are used to achieve satisfactory results.
- .8 Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 1000 mm (39").
- .9 Do not apply finishes on surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.
- .10 Prime coat of stain or varnish finishes may be reduced in accordance with manufacturer's directions.
- .11 Paint finish shall continue through behind all wall-mounted items (e.g. chalk and tack boards).

3.4. EXTERIOR FINISH / COATING SYSTEMS:

- .1 Paint exterior surfaces in accordance with the following MPI Painting Manual requirements:
 - .1 Structural Steel and Metal Fabrications:
 - .1 EXT 5.1B Water based light industrial G5 coating (over inorganic zinc primer).
 - .2 Steel - High Heat: (heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted)
 - .1 EXT 5.2A Heat resistant enamel finish, maximum 400° F (205° C)
 - .2 EXT 5.2B Heat resistant enamel, aluminum finish, maximum 800° F (427° C).
 - .3 EXT 5.2C Inorganic zinc rich coating, maximum 750° F (400° C).
 - .4 EXT 5.2D High heat resistant coating, maximum 1100° F (593° C).
 - .3 Galvanized Metal: (not chromate passivated)
 - .4 For high contact / high traffic areas (doors, frames, railings, misc. steel, pipes, etc.)
 - .5 For low contact / low traffic areas (overhead decking, ducts, gutters, flashing, etc.)
 - .1 EXT 5.3B Alkyd G5 finish for use on low contact / low traffic areas.
 - .2 EXT 5.3C Epoxy finish for use on high contact / high traffic areas
 - .3 EXT 5.3E Bituminous finish for use on low contact / low traffic areas, e.g. unexposed galvanized metal next to concrete, masonry, etc.

3.5. INTERIOR PAINT AND COATING SYSTEMS:

- .1 Paint interior surfaces in accordance with the following MPI Painting Manual requirements:
 - .1 Concrete Horizontal Surfaces: (floors and stairs)
 - .1 INT 3.2F Concrete floor sealer finish.
 - .2 Concrete Masonry Units: (smooth and split face block and brick)
 - .1 INT 4.2A Latex G5 finish.
 - .2 INT 4.2R Epoxy high build low gloss finish (over epoxy high build low gloss).
 - .3 Structural Steel and Metal Fabrications: (columns, beams, joists, etc.)
 - .1 INT 5.1E Alkyd G5 finish.
 - .4 Steel - High Heat: (boilers, furnaces, heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted)
 - .1 INT 5.2A Heat resistant enamel finish, maximum 400° F (205° C).
 - .2 INT 5.2B Heat resistant enamel, aluminum paint finish, maximum 800° F (427° C).

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- .3 INT 5.2C Inorganic zinc rich coating, maximum 750° F (400° C).
- .4 INT 5.2D High heat resistant coating, maximum 1100° F (593° C).
- .5 Galvanized Metal: (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.)
 - .1 INT 5.3A Latex G6 finish.
- .6 Dressed Lumber: (including doors, door and window frames, casings, molding, etc. where painted)
 - .1 INT 6.3E Polyurethane varnish G5 finish (over stain).
 - .2 INT 6.3K Polyurethane varnish G5 finish.
 - .3 INT 6.3T Latex semi-gloss finish (over latex primer).
 - .4 INT 6.3U Latex semi-gloss finish (over alkyd primer).
- .7 Wood Casework: (shelving, millwork, etc. where painted)
 - .1 INT 6.4A Latex G5 finish (over alkyd sealer).
 - .2 INT 6.4E Polyurethane varnish G5 finish (over stain).
 - .3 INT 6.4J Polyurethane varnish G5 finish.
 - .4 INT 6.4R Latex semi-gloss finish (over latex primer).
- .8 Plaster and Gypsum Board: (gypsum wallboard, drywall, "sheet rock type material", etc., and textured finishes)
 - .1 INT 9.2B High performance architectural latex G4 finish.
 - .2 INT 9.2N Epoxy high build low gloss finish (over latex sealer).
- .9 Canvas and Cotton Coverings:
 - .1 INT 10.1A Latex G3 finish.

3.6. MECHANICAL / ELECTRICAL EQUIPMENT AND RELATED SURFACES:

- .1 Unless otherwise specified or noted, paint all "unfinished" conduits, piping, hangers, ductwork and other mechanical and electrical equipment with color and texture to match adjacent surfaces, in the following areas:
 - .1 where exposed-to-view in all exterior and interior areas.
 - .2 in all interior high humidity interior areas.
 - .3 in all boiler room, mechanical and electrical rooms.
- .2 In unfinished areas leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .3 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .4 Do not paint over nameplates.
- .5 Paint the inside of all ductwork where visible behind louvers, grilles and diffusers for a minimum of 460 mm (18") or beyond sight line, whichever is greater, with primer and one coat of matt black (non-reflecting) paint.
- .6 Paint the inside of light valances gloss white.
- .7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .8 Paint red or band all fire protection piping and sprinkler lines in accordance with mechanical specification requirements. Keep sprinkler heads free of paint.
- .9 Paint yellow or band all natural gas piping in accordance with mechanical specification requirements.
- .10 Backprime and paint face and edges of plywood service panels for telephone and electrical equipment before installation to match adjacent wall surface. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.7. FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE:

- .1 All surfaces, preparation and paint applications shall be inspected.
- .2 Painted exterior and interior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to the Painting Inspection Agency inspector:

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- .1 brush / roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
 - .2 evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.
 - .3 damage due to touching before paint is sufficiently dry or any other contributory cause.
 - .4 damage due to application on moist surfaces or caused by inadequate protection from the weather.
 - .5 damage and/or contamination of paint due to blown contaminants (dust, spray paint, etc.).
- .3 Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces and final lighting source (including daylight) for interior surfaces:
- .1 visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39").
 - .2 visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39").
 - .3 visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.
 - .4 when the final coat on any surface exhibits a lack of uniformity of color, sheen, texture, and hiding across full surface area.
- .4 Painted surfaces rejected by the inspector shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas or areas without sufficient dry film thickness of paint shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.
- 3.8. PROTECTION:**
- .1 Protect all exterior surfaces and areas, including landscaping, walks, drives, all adjacent building surfaces (including glass, aluminum surfaces, etc.) and equipment and any labels and signage from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
 - .2 Protect all interior surfaces and areas, including glass, aluminum surfaces, etc. and equipment and any labels and signage from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
 - .3 Erect barriers or screens and post signs to warn of or limit or direct traffic away or around work area as required.
- 3.9. CLEAN-UP:**
- .1 Remove all paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
 - .2 Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.
 - .3 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
 - .4 Clean equipment and dispose of wash water / solvents as well as all other cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints, thinners, paint removers / strippers in accordance with the safety requirements of authorities having jurisdiction.
- 3.10. REPAINTING OF EXISTING FINISHES:**
- .1 Refer to MPI Maintenance Repainting Manual and Section 09920 for repainting of existing finishes.

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- .2 Use finish coat of respective new surface paint system for minor repair of existing finishes.
 Use system primer where existing finishes are damaged down to bare surface.

END OF PAINTING

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PART 1: GENERAL

1.1 GENERAL REQUIREMENTS

- .1 Conform to all applicable sections of Division 1.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Read carefully all other Sections of the specifications to determine the extent of prime and finish coats applied by others.
 - .1 Section 01500 - Temporary Facilities and Controls (temporary heat, lighting, scaffolds, etc.)

1.3 SCOPE OF WORK

- .1 Section Includes: All labor, materials, tools and other equipment, services and supervision required to complete all interior repainting work as indicated on Finish Schedules and to the full extent of the drawings and specifications.
- .2 Work under this contract shall also include, but not necessarily be limited to:
 - .1 Moisture testing of substrates.
 - .2 Surface preparation of substrates as required for acceptance of paint, including cleaning, small crack repair, patching, caulking, and making good surfaces and areas to the limits defined under MPI Repainting Manual Preparation requirements.
 - .3 Specific pre-treatments noted herein or specified in the MPI Repainting Manual.
 - .4 Sealing / priming surfaces for repainting in accordance with MPI Repainting Manual requirements.
 - .5 Provision of safe and adequate ventilation as required over and above temporary ventilation supplied by others, where toxic and/or volatile / flammable materials are being used.
- .3 Refer to drawings and schedules (e.g., Finish Schedule) for type, location and extent of interior repainting required, and include all touch-ups necessary to complete work shown, scheduled or specified.
- .4 This Section along with the drawings forms part of the Contract documents and is to be read, interpreted and coordinated with all other parts.
- .5 Division 0, Section 00700 - General Conditions and Section 00800 - Supplementary Conditions and Division 1, General Requirements form an integral part of this Section of Work. The Painting contractor shall refer to these and all other related parts.

1.4 REFERENCES:

- .1 The latest edition of the following reference standards shall govern all repainting work:
 - .1 Maintenance Repainting Manual by the Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List. (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
 - .2 Architectural Painting Specification Manual by the Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List. (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
 - .3 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
 - .4 PDCA Standard PDCA P14-06 Levels of Surface Preparation for Repainting and Maintenance Projects Receiving Architectural Coating as issued by The Painting and Decorating Contractors of America.
 - .5 ASTM D6677 Measuring Adhesion by Knife Test.
 - .6 ASTM D3359 Measuring Adhesion by the Tape Test.

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1.5 QUALITY ASSURANCE:

- .1 This Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested, Contractor shall provide a list of the last three comparable interior repainting jobs including, name and location, specifying authority / project manager, start / completion dates and value of the painting work.
- .2 Employ fully trained workmen who are regularly employed in this field. In the acceptance or rejection of painting work, no allowance will be made for lack of skill on the part of painters.
- .3 All materials, preparation and workmanship shall conform to requirements of the latest edition of the Architectural Painting Specification Manual by the Master Painters Institute (MPI) (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
- .4 All interior repainting work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority. The painting contractor shall notify the Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .5 All surfaces requiring repainting shall be inspected by the Painting Subcontractor who shall notify the Consultant, Paint Inspection Agency, and General Contractor in writing of any defects or problems, prior to commencing repainting work or after the preparation work.

1.6 REGULATORY REQUIREMENTS:

- .1 Conform to work place safety regulations for storage, mixing, application and disposal of all paint related materials to requirements of those authorities having jurisdiction.
- .2 Conform to safety precautions in accordance with the latest requirements to Industrial Health and Safety Regulations, latest edition, of authorities having jurisdiction.
- .3 Notify the Paint Inspection Agency on award of contract and make application for assignment of an Inspector using appropriate forms supplied by the Agency as well as provide a copy of the project repainting specification, drawings, color schedule and list of proposed materials for review purposes prior to commencement of work.
- .4 Fully cooperate at all times with the requirements of the Paint Inspection Agency in the performance of their duties, including providing access and assistance as required to complete inspection work.

1.7 MOCK-UPS:

- .1 When requested by the Consultant or Paint Inspection Agency, prepare and repaint designated surface, area, room or item to requirements specified herein, with specified paint or coating showing selected colors, gloss / sheen, textures and workmanship to MPI Painting Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

1.8 SUBMITTALS:

- .1 All submittals shall be in accordance with the requirements of Section 01340 – Shop Drawings.
- .2 Submit written proof of ability to supply a 100% two (2) year warranty on all work completed under this specification.
- .3 Submit a list of all painting materials to the Consultant and the Paint Inspection Agency for review prior to ordering materials.
- .4 If requested, provide an invoice list of all paint materials ordered for project work to Paint Inspection Agency indicating manufacturer, types and quantities for verification and compliance with specification and design requirements.
- .5 Submit two sets of Material Safety Data Sheets (MSDS) prior to commencement of work for review and for posting at job site as required.

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- .6 If requested, submit work schedule for various stages of work when repainting occupied areas for the Consultant's review and Owner's approval.
- .7 At project completion provide an itemized list complete with manufacturer, paint type and color coding for all colors used for Owner's later use in maintenance.
- .8 At project completion provide properly packaged maintenance materials as noted herein and obtain a signed receipt.

1.9 PRODUCT DELIVERY, STORAGE AND HANDLING:

- .1 Deliver all painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and color designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.
- .2 Store all paint materials in original labeled containers in a secure (lockable), dry, heated and well ventilated single designated area meeting the minimum requirements of both paint manufacturer and authorities having jurisdiction and at a minimum ambient temperature of 45° F (7° C). Only material used on this project to be stored on site.
- .3 Where toxic and/or volatile / explosive / flammable materials are being used, provide adequate fireproof storage lockers and take all necessary precautions and post adequate warnings (e.g. no smoking) as required.
- .4 Take all necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) shall be stored in suitable closed and rated containers and removed from the site on a daily basis.
- .5 Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.

1.10 PROJECT / SITE REQUIREMENTS:

- .1 UNLESS specifically pre-approved by the specifying body, Paint Inspection Agency and the applied product manufacturer, perform no interior repainting work when interior ambient air and substrate temperatures and humidity level exceeds manufacturer's stated limits.
- .2 Perform no interior repainting work unless adequate continuous ventilation and sufficient heating facilities are in place to maintain minimum ambient air and substrate temperatures for 24 hours before, during and after paint application. Provide supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements. Because of moisture generation and potential fire hazard, the use of gas fired heating units is not advised, unless otherwise approved by the Owner / Consultant and authorities having jurisdiction.
- .3 Test suspect surfaces (concrete, masonry, plaster and wood surfaces) for moisture and alkalinity as required. Conduct all moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test". The maximum moisture shall not exceed:
 - .1 15% for wood.
 - .2 12 % for plaster and gypsum board.
- .4 Perform no repainting work unless a minimum lighting level of 323 Lux (30 foot candles) is provided on surfaces to be repainted. Adequate lighting facilities shall be provided by the General Contractor.
- .5 Apply paint only to dry, clean, and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.

1.11 SCHEDULING:

- .1 Schedule painting operations to prevent disruption of and by other trades.
- .2 Schedule painting operations in occupied facilities to prevent disruption of occupants in and about the building. Painting shall be carried out in accordance with Owner's operating requirements. Schedule work

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such that painted surfaces will have dried before occupants are affected. Obtain written authorization from Consultant / Owner for changes in work schedule.

1.12 WASTE MANAGEMENT AND DISPOSAL:

- .1 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Obtain information on these controls from applicable Provincial government departments having jurisdiction.
- .2 All waste materials shall be separated and recycled. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility. Materials that cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- .3 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .4 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:
 - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
 - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
 - .6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
- .5 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

1.13 GUARANTEE:

- .1 Furnish a two (2) year 100% Warranty (labour and materials) on the work completed under this specification.

1.14 MAINTENANCE MATERIALS:

- .1 At project completion provide 4 liters (1 gallon) of each type and color of paint from same production run (batch mix) used in unopened cans, properly labeled and identified for Owner's later use in maintenance. Store where directed.

PART 2: PRODUCTS

2.1 MATERIALS

- .1 Only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project. All such material shall be from a single manufacturer for each system used.
- .2 Other materials such as linseed oil, shellac, thinners, solvents, etc. shall be the highest quality product of an MPI listed manufacturer and shall be compatible with paint materials being used as required.
- .3 All materials used shall be lead and mercury free and shall have low VOC content where possible.
- .4 Where required, use only materials having a minimum MPI "Environmentally Friendly" E1 rating based on VOC (EPA Method 24) content levels.
- .5 Where indoor air quality (odour) is an issue, use only MPI listed materials having a minimum E2 rating.

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- .6 All paint materials shall have good flowing and brushing properties and shall dry or cure free of blemishes, sags, air entrapment, etc. Refer to 3.7, Field Quality Control / Standard of Acceptance requirements.
- .7 Where required, paints and coatings shall meet flame spread and smoke developed ratings designated by local Code requirements and/or authorities having jurisdiction.

2.2 EQUIPMENT:

- .1 Painting Equipment: to best trade standards for type of product and application.
- .2 Spray-Painting Equipment: of ample capacity, suited to the type and consistency of paint or coating being applied and kept clean and in good working order at all times.
- .3 All power tools, including power sanders and grinders must be equipped with dust collection system attached to HEPA dust extractor maintained in good working order.

2.3 MIXING AND TINTING:

- .1 Unless otherwise specified herein or pre-approved, all paint shall be ready-mixed and pre-tinted. Re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and color and gloss uniformity.
- .2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.
- .3 Where thinner is used, addition shall not exceed paint manufacturer's recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.
- .4 If required, thin paint for spraying according in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.

2.4 FINISH AND COLORS:

- .1 Unless otherwise specified herein, all repainting work shall be in accordance with MPI Premium Grade finish requirements.
- .2 Colors shall be as selected by the Consultant from a manufacturer's full range of colors. A Finish Schedule will be furnished after award of the Contract.
- .3 Generally and unless otherwise specified herein or noted on Finish Schedules the quantity of colors and finishes shall be based on the following criteria:
 - .1 Interior colors will be based on five (5) base colors and three (3) accent colors with a maximum of three (3) deep or bright colors. No more than eight (8) colors will be selected for the entire project and no more than three (3) colors will be selected in each area. Note that this does not include pre-finished items by others, e.g. aluminum or vinyl windows, aluminum doors and handrails, etc.
 - .2 Interior colors and/or patterns shall be consistent with a maximum of three (3) separate schemes prepared.
 - .3 Ceilings (except those having a spray textured coating) shall be painted white.
- .4 Except as noted herein or indicated on the Finish Schedule, interior walls and ceiling surfaces shall be painted in accordance with the following criteria over appropriate prime / sealer coat:
 - .1 all masonry surface areas (except as noted): catalyzed water-based epoxy with G5 (semi-gloss) finish.
 - .2 all gypsum board surface areas (except as noted): pre-catalyzed water-based epoxy with G4 (satin) finish.
- .5 Doors, frames and trim shall be repainted a different color than wall. Unless otherwise noted or scheduled all doors, frames and trim shall be repainted using a G5 (semi-gloss) finish.
- .6 Access doors, prime coated butts and other prime painted hardware (e.g. door closers), registers, radiators and covers, exposed piping and electrical panels shall be painted to match adjacent surfaces (i.e. same color, texture and sheen), unless otherwise noted or where pre-finished.

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2.5 GLOSS / SHEEN RATINGS:

- .1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following MPI values:

Gloss Level	Description	Units @ 60 degrees	Units @ 85 degrees
G1	Matte or Flat finish	0 to 5	10 max.
G2	Velvet finish	0 to 10	10 to 35
G3	Eggshell finish	10 to 25	10 to 35
G4	Satin finish	20 to 35	35 min.
G5	Semi-Gloss finish	35 to 70	
G6	Gloss finish	70 to 85	
G7	High-Gloss finish	> 85	

- .2 Gloss level ratings of all painted surfaces shall be as specified herein and as noted on Finish Schedule.

PART 3: EXECUTION

3.1 CONDITION OF SURFACES:

- .1 Prior to commencement of work of this section, thoroughly examine (and test as required) all conditions and surfaces scheduled to be repainted and report in writing to the Contractor and Consultant any conditions or surfaces that will adversely affect work of this section.
- .2 The degree of surface deterioration (DSD) shall be assessed using the assessment criteria indicated in the **MPI** Maintenance Repainting Manual. In general the **MPI** DSD ratings and descriptions are as follows:

Condition	Description
DSD-0	Sound Surface (may include visual (aesthetic) defects that do not affect film's protective properties).
DSD-1	Slightly Deteriorated Surface (may show fading; gloss reduction, slight surface contamination, minor pin holes scratches, etc.) / Minor cosmetic defects (runs, sags, etc.).
DSD-2	Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, staining, etc.).
DSD-3	Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
DSD-4	Substrate Damage (repair or replacement of surface required by others).

- .3 Other than the repair of DSD-1 to DSD-3 defects included under this scope of work, structural and DSD-4 substrate defects discovered prior to and after surface preparation or after first coat of paint shall be made good and sanded by others ready for painting, unless otherwise agreed to by the Owner and painter to be included in this Work.
- .4 No repainting work shall commence until all such DSD-4 adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor. The Painting Subcontractor shall not be responsible for the condition of the substrate or for correcting defects and deficiencies in the substrate, which may adversely affect the painting work except for minimal work normally performed by the Painting Subcontractor and as, indicated herein. It shall always, however, be the responsibility of the Painting Subcontractor to see that surfaces are properly prepared before any paint or coating is applied. It shall also be the Painting Subcontractor's responsibility to paint the surface as specified providing that the owner accepts responsibility for uncorrected DSD-4 substrate conditions.

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3.2 PREPARATION OF SURFACES:

- .1 Prepare all surfaces in accordance with MPI requirements. Refer to the MPI Repainting Manual in regard to specific requirements.
- .2 Prepare surfaces to a Level 3 "Superior" surface preparation level as defined by PDCA Industry Standard PDCA P14-06 Levels of Surface Preparation for Repainting and Maintenance Projects Receiving Architectural Coatings.
- .3 Sand, clean, dry, etch, neutralize and/or test all surfaces under adequate illumination, ventilation and temperature requirements.
- .4 Remove and securely store all miscellaneous hardware and surface fittings / fastenings (e.g. electrical plates, mechanical louvers, door and window hardware (e.g. hinges, knobs, locks, trim, frame stops), removable rating / hazard / instruction labels, washroom accessories, light fixture trim, etc. from wall and ceiling surfaces, doors and frames, prior to repainting. Carefully clean and replace all such items upon completion of repainting work in each area. Do not use solvent or reactive cleaning agents on items that will mar or remove finishes (e.g. lacquer finishes). Doors shall be removed before painting to paint bottom and top edges and then re-hung.
- .5 Protect all adjacent interior surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, etc., from repainting operations and damage with drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
- .6 Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
- .7 Concrete Block – Remove all loose and poorly adhered coating until a sound substrate is provided. Acceptability of sound substrate will be determined by use of ASTM D6677 Measuring Adhesion by Knife Test and ASTM D3359 Measuring Adhesion by the Tape Test. Results below 4A for ASTM D3359 will be considered unacceptable. Results below 8 for ASTM D6677 will be considered unacceptable. Acceptable methods of surface preparation include MPI RSP-1 Hand Cleaning, MPI RSP-2 Solvent Cleaning, and MPI RSP-4 Power Tool Cleaning. Where ridging occurs across a Concrete Block, remove ridge and provide a uniform surface across the entire block face.
- .8 Metal Doors and Frames – Remove all loose and poorly adhered coating until a sound substrate is provided. Acceptability of sound substrate will be determined by use of ASTM D6677 Measuring Adhesion by Knife Test and ASTM D3359 Measuring Adhesion by the Tape Test. Results below 4A for ASTM D3359 will be considered unacceptable. Results below 8 for ASTM D6677 will be considered unacceptable. Acceptable methods of surface preparation include MPI RSP-1 Hand Cleaning, MPI RSP-2 Solvent Cleaning, and MPI RSP-4 Power Tool Cleaning.
- .9 Structural Steel and Metal Fabrications - Remove all loose and poorly adhered coating until a sound substrate is provided. Acceptability of sound substrate will be determined by use of ASTM D6677 Measuring Adhesion by Knife Test and ASTM D3359 Measuring Adhesion by the Tape Test. Results below 4A for ASTM D3359 will be considered unacceptable. Results below 8 for ASTM D6677 will be considered unacceptable. Acceptable methods of surface preparation include MPI RSP-1 Hand Cleaning, MPI RSP-2 Solvent Cleaning, and MPI RSP-4 Power Tool Cleaning.
- .10 Plaster and Gypsum Board - Remove all loose and poorly adhered coating until a sound substrate is provided. Acceptability of sound substrate will be determined by use of ASTM D6677 Measuring Adhesion by Knife Test and ASTM D3359 Measuring Adhesion by the Tape Test. Results below 4A for ASTM D3359 will be considered unacceptable. Results below 8 for ASTM D6677 will be considered unacceptable. Acceptable methods of surface preparation include MPI RSP-1 Hand Cleaning, MPI RSP-2 Solvent Cleaning, and MPI RSP-4 Power Tool Cleaning.

3.3 DUST CONTROL:

- .1 Capture and contain all dust generated from preparation activities in methods consistent with Ontario Ministry of Labour: Measures and Procedures for Working with Lead, regardless of detected levels of lead.

3.4 APPLICATION:

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- .1 Do not commence repainting unless substrates are acceptable and until all environmental conditions (heating, ventilation, lighting and completion of other subtrade work, if applicable) are acceptable for applications of products.
- .2 Apply primer, paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.
- .3 Apply primer, paint or stain in a workmanlike manner using skilled and trade qualified applicators as noted under Quality Assurance.
- .4 Apply primer, paint or stain within an appropriate time frame after cleaning when environmental conditions encourage flash-rusting, rusting, contamination or the manufacturer's paint specifications require earlier applications.
- .5 Primer, paint or stain coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendations.
- .6 Primers and top-coats must be from same manufacturer.
- .7 All substrates where the previous coating has been removed down to the substrate, require the application of an appropriate primer prior to the application of the specified system.
- .8 Tint each coat of paint progressively lighter to enable confirmation of number of coats.
- .9 Unless otherwise approved by the painting inspection agency, apply a minimum of four coats of paint where deep or bright colors are used to achieve satisfactory results.
- .10 Sand and dust between each coat to provide an anchor for next coat and to remove defects in previous coat (runs, sags, etc.) visible from a distance up to 1000 mm (39").
- .11 Do not apply finishes on interior surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.
- .12 To avoid air entrapment in applied coats, apply materials in strict accordance with manufacturer's spread rates and application requirements.

3.5 TRANSITION PRIMERS:

- .1 Ensure that a transition primer, MPI#17 is applied over all surfaces where waterborne systems have been specified.

3.6 INTERIOR FINISH / COATING SYSTEMS:

- .1 Paint interior surfaces in accordance with the following MPI Painting Manual requirements:
 - .1 Concrete Masonry Units: (smooth and split face block and brick)

RIN 4.2F	DSD-3	Epoxy-modified latex, Premium Grade, G5 Semi-Gloss finish.
	Full Prime	MPI #17
	1 st Coat	MPI#215
	2 nd Coat	MPI#215
 - .2 Structural Steel and Metal Fabrications: (lockers, columns, beams, joists, stair stringers, risers, handrails, etc.)

RIN 5.1	DSD-3	Water Based Polyamine Epoxy, Premium Grade, Egg-Shell finish.
		Spray application only.
	Full Prime	Sherwin Williams Pro Industrial Pro-Cryl Primer B66-A01320
	1 st Coat	Sherwin Williams Pro Industrial Water Based Catalyzed Epoxy B73
Series	2 nd Coat	Sherwin Williams Pro Industrial Water Based Catalyzed Epoxy B73
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- .3 Galvanized Metal: (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.)

RIN 5.3 DSD-3 Epoxy modified latex, Premium Grade, G5 Semi-Gloss finish.

Full Prime	MPI#17	Primer, Bonding, Water Based
1 st Coat	MPI#215	Epoxy-Modified Latex, Interior, Semi-Gloss
2 nd Coat	MPI#215	Epoxy-Modified Latex, Interior, Semi-Gloss

- .4 Plaster and Gypsum Board: (gypsum wallboard, drywall, "sheet rock type material", etc., and textured finishes)

RIN 9.2E DSD-3 Epoxy Modified latex, Premium Grade, G5 Semi-Gloss finish.

Full Prime	MPI#17	Primer, Bonding, Water Based
1 st Coat	MPI#215	Epoxy Modified Latex, Interior, Semi-Gloss
2 nd Coat	MPI#215	Epoxy Modified Latex, Interior, Semi-Gloss

- .5 Galvanized Metal: Exterior (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.)

EXT 5.3G W.B. Light Industrial Coating, Premium Grade, G5 Semi-Gloss finish.

Full Prime	MPI#17	Primer, Bonding, Water Based
1 st Coat	MPI#163	W.B. Light Industrial Coating, Exterior, Semi-Gloss
2 nd Coat	MPI#163	W.B. Light Industrial Coating, Exterior, Semi-Gloss

3.7 MECHANICAL / ELECTRICAL EQUIPMENT AND RELATED SURFACES:

- .1 Unless otherwise noted, repainting shall also include exposed to view / previously painted mechanical and electrical equipment and components (panels, conduits, piping, hangers, ductwork, etc.).
- .2 Touch up scratches and marks and repaint such mechanical and electrical equipment and components with colour, and sheen finish to match existing unless otherwise noted or scheduled.
- .3 Do not paint over name plates or instruction labels.
- .4 Leave unfinished exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish.
- .5 Keep repainted sprinkler heads free of paint.
- .6 Do not paint interior transformers and substation equipment.

3.8 FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE:

- .1 All surfaces, preparation and paint applications shall be inspected.
- .2 Repainted interior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to the Painting Inspection Agency inspector:
 - .1 brush / roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
 - .2 evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.
 - .3 damage due to touching before paint is sufficiently dry or any other contributory cause.

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- .4 damage due to application on moist surfaces or caused by inadequate protection from the weather.
- .5 damage and/or contamination of paint due to blown contaminants (dust, spray paint, etc.).
- .3 Repainted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces and final lighting source (including daylight) for interior surfaces:
 - .1 visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39").
 - .2 visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39").
 - .3 visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.
 - .4 when the final coat on any surface exhibits a lack of uniformity of color, sheen, texture, and hiding across full surface area.
- .4 Repainted surfaces rejected by the inspector shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas or areas without sufficient dry film thickness of paint shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.

3.9 PROTECTION:

- .1 Protect all interior surfaces and areas, including glass, aluminum surfaces, etc. and equipment and any labels and signage from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
- .2 Erect barriers or screens and post signs to warn of or limit or direct traffic away or around work area as required.

3.10 CLEAN-UP:

- .1 Remove all paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
- .2 Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.
- .3 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
- .4 Clean equipment and dispose of wash water / solvents as well as all other cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints, thinners, paint removers / strippers in accordance with the safety requirements of authorities having jurisdiction.

END OF INTERIOR REPAINTING

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PART 1: GENERAL

1.1. GENERAL REQUIREMENTS

- .1 Conform to all applicable sections of Division 1.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 01340: Shop Drawings

1.3. TOLERANCES

- .1 Fabricate work of this Section within tolerances specified for work in which it is built.

1.4. SUBMITTALS

- .1 Submit shop drawings for each specialty product, for Consultant's review before fabrication, in accordance with Section 01001.

1.5. DELIVERY, STORAGE AND HANDLING

- .1 Package or crate and brace products to prevent distortion in shipment and handling. Label packages and crates, and protect finish surfaces by sturdy wrappings.
- .2 Deliver products to location at building site designated by Contractor.

PART 2: PRODUCTS

2.1. MATERIALS

- .1 Precast Tread and Riser Replacement:
 - .1 Provide new engineered precast concrete step units to match existing rise and run.
 - .2 Provide engineer stamped shop drawings.
 - .3 Adjust top and bottom steps for existing landing conditions.
 - .4 Steps to span from stringer to stringer without continuous pans.
 - .5 Steps to have embedded welding clips at stringer ends.
 - .6 Provide welding supports at stringers.
 - .7 Steps to be manufactured to receive resilient flooring treads and risers so that top of resilient tread is flush with adjacent landings.
 - .8 Acceptable manufacturers:
 - .1 Ed's Concrete Products
 - .1 Address: 1266 Erie Street, Stratford ON N4Z 0A1
 - .2 Contact: Byron Veldjesgraaf
 - .3 Email: byron@edsconcrete.com
 - .4 Business: (519) 271-6590
 - .2 Parsons Precast Inc.
 - .1 Address: 1315 Rymal Road East, Hamilton, ON L8W 3N1
 - .2 Contact: Derrick Pont
 - .3 Email: dpont@parsonsprecast.ca
 - .4 Cell: 905-971-2782

PART 3: EXECUTION

3.1. INSTALLATION

- .1 Strictly follow manufacturer's installation procedures.
- .2 Install where indicated or as directed by consultants.
- .3 Install work square, plumb, straight, true, and accurately fitted.
- .4 Include anchors, dowels, and fastenings necessary to anchor work together and to work of other trades.
- .5 Where installing in masonry, center material between masonry block joints. Verify location, mounting heights, and dimensions of all units before installation. Anchor in accordance with manufacturer's printed instructions.

**SIMCOE COUNTY DISTRICT SCHOOL BOARD
HOLLY MEADOWS ES - ROOFING, MECHANICAL & INTERIOR FINISHES UPGRADES**

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- .6 Insulate where necessary to prevent electrolysis between metal to metal or metal to masonry or concrete contact.

END OF MISCELLANEOUS SPECIALTIES