

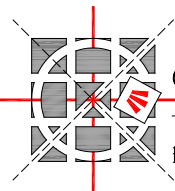
BID DOCUMENTS & SPECIFICATIONS

Issued for Tender & Construction

Holy Cross CSS Renovation

**for the
Algonquin & Lakeshore Catholic District
School Board**

Date: May 6, 2022
Project N° 22016
Tender N° T-2022-PPS03



COLBOURNE & KEMBEL , ARCHITECTS INC.

739D ARLINGTON PARK PLACE KINGSTON ONTARIO K7M 8M8
E-MAIL info@ckai.ca

TEL 613-384-2240
FAX 613-384-1277

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APPENDIX A

2021 Annual Asbestos Containing Materials Inspection and Designated Substances Inspection, Holy Cross Catholic Secondary School, 1085 Woodbine, Kingston, Ontario, Conducted by S2S Environmental Inc., October 15, 2021

APPENDIX B

GUIDELINE LEAD ON CONSTRUCTION PROJECTS

END OF SECTION

PROJECT

HOLY CROSS CATHOLIC SECONDARY SCHOOL
1085 WOODBINE ROAD, KINGSTON, ON K7P 2V9

OWNER

ALGONQUIN & LAKESHORE CATHOLIC DISTRICT SCHOOL BOARD
151 Dairy Avenue
Napanea, Ontario K7R 4B2

ARCHITECT

COLBOURNE & KEMBEL, ARCHITECTS INC.
739D Arlington Park Place
Kingston, Ontario K7M 8M8

Rhonda Horne-McQuay
rhonda@ckai.ca

MECHANICAL ENGINEERING

NEIVA ENGINEERING
706 Newmarket Lane,
Kingston, ON K7K 0C8

ELECTRICAL ENGINEERING

A2FL ENGINEERING
4948 Wallace Rd,
Harrowsmith, ON K0H 1V0

1 GENERAL

1.1 CONTRACT FORM

- .1 The form of contract between the Owner and the Contractor will be CCDC2-2008, as amended by the Supplementary Conditions described in Section 00 30 00.

1.2 IMPORTANT DATES

- .1 Documents Issue Date: May 6, 2022
- Mandatory Site Meeting: **Thursday, May 12, 2022, 3:00:00 PM**
- Final Date for Questions: Thursday, May 19, 2022
- Final Addendum, if necessary: Tuesday, May 24, 2022
- Closing Date: Thursday, May 26, 2022, 2:00:00 PM local time**

1.3 DEFINITIONS

- .1 “Closing Time”, means the Tender submission date and time as herein.
- .2 “Days”, means calendar days.
- .3 “Bidder”, means an entity that submits a tender in response to this RFT and, in respect of the period prior to the RFT closing time, as the context may suggest, refers to a potential Bidder.
- .4 “Contractor”, means any person, firm or organization, as the case may be, that has been awarded the contract to perform the work as outlined within this RFT.

1.4 BID FORM

- .1 The form of bid between the Owner and the Contractor will be as follows in Section 00 20 00.
- .2 Submit Stipulated Price Bid, as requested in Section 00 20 00.
- .3 Bids shall be submitted in a sealed opaque envelope addressed to:
Algonquin & Lakeshore Catholic District School Board
151 Dairy Avenue
Napanee, ON.
Brad Hurdis, Capital Projects Manager

And endorsed:

T-2022-PPS03 – Renovations to Holy Cross Catholic Secondary School

- .4 Since submissions must be in a sealed envelope/package, submissions by fax or electronic delivery are not acceptable.

1.5 MANDATORY SITE MEETING

- .1 A pre-bid mandatory site meeting for **Contractors** will be held at the site, beginning outside the main entrance of the school at

**Holy Cross CSS, 1085 Woodbine Road, Kingston
Thursday, May 12, 2022 at 3:00:00 pm.**

- .2 The Consultant will oversee the signing of the "Contractor Sign in Sheet" and once all in attendance have signed the sheet and the Consultant has called the meeting to order, bidders who arrive after that time shall be considered late and will not be permitted to sign the "Contractor Sign in Sheet".
- .3 Bids received from Contractors not on the list of attendees at the site meeting will be rejected and returned unopened. Sub-trade bidders are also encouraged to attend this meeting.

1.6 SUBMISSION DUE DATE

- .1 Tenders must be received by the Board before the closing date and times as contained herein.
- .2 Bidders should instruct couriers or any who may be delivering a tender that the tender should be delivered only to the reception desk of the Board's Education Centre to ensure proper receipt by the Board. Tenders delivered to any other facility or to any other area of the Education Centre may be rejected.
- .3 Local time shall be governed by the digital clock in the reception area of the Board's Education Centre. The time of any other clock will not be considered.
- .4 All tenders received at the reception desk will have the date and time of receipt recorded on the envelope/package. Receipts will be provided upon request and will reflect the time recorded on the envelope/package.
- .5 The responsibility of ensuring that a tender has been properly received by the Board remains unequivocally with the Bidder.

1.7 ELIGIBILITY

- .1 Bids are by invitation only from prequalified Category 1 General Contractors. Bids from unsolicited bidders shall be returned unopened.
- .2 Prequalified General Contractors for the project are:
- | | |
|---|------------|
| Al White Landscaping & Excavating | Belleville |
| Anglin Group Limited | Kingston |
| David J. Cupido Construction Limited | Kingston |
| Emmons and Mitchell Construction Limited (2000) | Kingston |
| Frecon Construction Limited | Kingston |
| Jean Daoust Construction Incorporated | Ottawa |
| K. Knudsen Construction Limited | Belleville |
| Parkside Landscaping & Contracting | Belleville |
| Strong Bros. General Contracting Limited | Roslin |

T. Donaldson Construction Limited	Seeley's Bay
Team JP Contracting	Kingston
Tom Belch & Sons Building Contractors Limited	Ameliasburg
Ubcon Construction Limited	Seeley's Bay
Wemp & Smith Construction Limited	Harrowsmith

- .3 Only bids received from prequalified bidders who have attended the Mandatory Site Meeting will be considered. All other bids shall be deemed non-compliant and will not receive further consideration.

1.8 LATE SUBMISSIONS

- .1 Any tender received after the closing time specified in this RFT, shall not be accepted for consideration and will be sent back to the Bidder unopened, with a letter stating the reason for the return.

1.9 ACCEPTANCE OF TERMS

- .1 Each Bidder, by submitting a tender, represents that the Bidder has read and completely understands, and accepts all provisions contained in this RFT.

1.10 DRAWINGS AND SPECIFICATIONS

- .1 PDF Tender Documents will be available via Biddingo for each prequalified bidder

- .2 **Written enquiries only will be accepted and shall be directed to:**
Colbourne & Kembel, Architects Inc.

rhonda@ckai.ca

cc: info@ckai.ca

Enquiries by phone will not be accepted.

Final Timeline to submit enquiries:

5:00:00 PM, May 19, 2022. Enquiries received after this time period will not be responded to.

Final addendum, if necessary, will be uploaded to Biddingo to the eligible bidders by

5:00 PM, May 24, 2022.

- .3 Bidders shall be responsible for the distribution of all contract Documents and Addenda to all Subcontractors and suppliers. Neither the Board, nor its employees nor its agents shall be responsible for any information or instructions given to the Bidder, with the exception of information or instructions provided in writing by the purchasing designate.

- .4 All bidders shall make themselves familiar and be responsible for the requirements set out in Division 00, Project Bidding and Contract Information; and Division 01, General Requirements.

- .5 Drawings and Specifications will be on display at:

- .1 www.biddingo.com

- .6 The Bidder is to review the Bid Set upon receipt and verify that all drawings, specifications, and schedules are included. Inform Tender Coordinator immediately of any missing information.
- .7 The Bid Documents are made available only for the purpose of submitting Bids for the Project. Availability and/or use of the Bid Documents does not confer a licence or grant for any other purpose.

1.11 COPYRIGHT

- .1 Notwithstanding GC 1.1.11 of the contract, for the purposes of the bidding stage only, the related sections of the specifications and drawings may be copied for issue to sub-trades for this project. Each such subdivision shall be accompanied by Divisions 00 and 01 in their entirety.

1.12 ADDENDA

- .1 Bidders may, prior to the closing date, be advised in writing by addenda of required additions to, deletions from, or alterations to requirements of the RFT documents.
- .2 All addenda will be posted via Biddingo to the eligible bidders at least seven days prior to the closing date. Where it becomes necessary, in the sole opinion of the Board, to issue an addendum less than seven days prior to the closing deadline, the Board will extend the closing date accordingly. The extended closing date will be communicated in the addendum.
- .3 All addenda shall become part of the RFT documents and shall be allowed for in arriving at a contract award.
- .4 Each Bidder shall be responsible for verifying before depositing its bid that it has received all addenda that may have been issued and acknowledge such addenda as required on the bid form.

1.13 MULTIPLE TENDERS

- .1 A contractor may amend their submitted bid at any time up to closing time by submitting a further bid form, subject to the same requirements for submission as the original bid. The last bid received shall govern. Amendments by facsimile transmission, electronic mail, or telephone will not be accepted.

1.14 BIDDER EXPENSES

- .1 Bidders are solely responsible for their own expenses in preparing a response to this RFT and for subsequent meetings with the Board. If the Board elects to reject all tenders, the Board will not be liable to any Bidder for any claims, whether for costs or damages incurred by the Bidder in preparing the tender, loss of anticipated profit, or any other matter.

1.15 PROJECT SCHEDULE

- .1 Construction start on site July 4, 2022. All work to be completed by August 19, 2022.

- .2 All work after August 19, 2022 must occur outside of school hours. GC must advance arrange any work outside of normal school business hours 8:30 am to 2:30 pm Mon-Fri. **Overtime will not be reimbursable.**

1.16 LITIGATION HISTORY WITH THE BOARD

1. The Board may, in its absolute discretion, reject a bid submitted by the bidder prior to or after bid opening, if the bidder:
 - (a) is, or has in the past been, a party to litigation with the Board; or
 - (b) directly or indirectly, including by common ownership or control or otherwise, is related to a party currently in litigation with the Board or a party that has in the past been in litigation with the Board; or
 - (c) intends to use a sub-contractor in respect of the specific project who is, or has in the past been, a party to litigation with the Board, or who, directly or indirectly, including by common ownership or control or otherwise, is related to a party currently in litigation with the Board or a party that has in the past been in litigation with the Board.
2. For the purposes of this section, the phrase, "litigation with the Board" includes cases in which the bidder or prospective bidder or any of the parties named above, have advised the Board in writing of their intention to commence litigation, or have commenced or have advised the Board of their intention to commence an arbitral proceeding against the Board.
3. Bids from any bidder in any of the above circumstances, provided the Board has exercised its discretion to reject, shall be rejected as informal, irregular and non-compliant.
4. In determining whether or not to reject a bid under this section, the Board will consider whether the litigation (past or current) is likely to affect a bidder's ability to work with the Board, its consultants and representatives, and whether the Board's experience with the bidder, the related party or sub-contractor, as the case may be, in the matter giving rise to the litigation, indicates that the Board is likely to incur increased staff and legal costs in the administration of the Contract if it is awarded to the bidder.

1.17 TENDER REJECTION

- .1 The lowest cost or any tender may not necessarily be accepted. The Board, its sole discretion, reserves the right to accept any or all tenders or to cancel the RFT in whole or in part at any time without award.
- .2 Where the Board receives only one compliant tender, the Board reserves the right to either cancel the RFT, award to the Bidder or enter into negotiations with the Bidder.
- .3 Where the Board exercises its right to cancel the RFT, the Board may issue a new request for tender, sole source, or do nothing.
- .4 Bids will be declared informal and rejected if:
 - .1 The bid is qualified in any way.
 - .2 The bid deposit or consent to surety are not provided.
 - .3 The bid form is not completed properly or entirely.
 - .4 An improper bid form is used.
 - .5 Late receipt.
 - .6 The bid has been withdrawn prior to closing.

.7 Other factors that would cause the bid to be rejected as noted herein, or as are considered reasonable.

1.18 RIGHT TO WAIVE MINOR NON-COMPLIANCE

- .1 The Board reserves the right, in its sole and unfettered discretion, to reject or waive minor errors and non-compliance contained in a tender without having to disqualify the Bidder. The Board defines minor errors and matters of non-compliance as those which do not have the effect of creating an advantage of one submission over another but may be merely a matter of form.

1.19 ADDITIONAL RIGHTS OF THE BOARD

- .1 In addition to any other express rights or any other rights which may be implied in the circumstances, the Board reserves the right to:
- a) Make public the names of any or all Bidders and the total cost submitted by any Bidder;
 - b) Request written clarification or the submission of supplementary written information from any Bidder and incorporate such clarification or supplementary written information into the Bidder's tender, at the Board's discretion, provided that any clarification or submission of supplementary written information shall not be an opportunity for the Bidder to correct errors in its tender or to change or enhance the tender in any material manner;
 - c) Disqualify any Bidder whose tender contains misrepresentations or any other inaccurate or misleading information, or any Bidder whose reasonable failure to cooperate with the Board impedes the evaluation process, or whose tender is determined to be non-compliant with the requirement of the RFT;
 - d) Disqualify a tender where the Bidder has previously breached a contract with the Board, or the Bidder reveals a conflict of interest or any unfair advantage is brought to the attention of the Board;
 - e) Disqualify any tender of any Bidder who has breached any applicable laws or who has engaged in conduct prohibited by this RFT, including where there is any evidence that the Bidder or any of its employees or agents colluded with any other Bidder, its employees or agents in the preparation of the tender; and
 - f) Make changes, including substantial changes, to this RFT provided that those changes are issued by way of addenda in the manner set out in this RFT.

1.20 MUNICIPAL FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

- .1 The tender and any accompanying documentation submitted by the Bidder prior to the closing date specified in this document shall become the property of the Board and shall not be returned. The tender shall be subject to the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, M-56. The Bidder must identify any information contained in the tender that is submitted in confidence.

1.21 CONFLICT OF INTEREST

- .1 Each Bidder shall declare to the Board as part of their tender any situation that may be either a conflict of interest or a potential or perceived conflict of interest with the contractual obligations of their tender.

- .2 No member of the Board and no officer or staff member of the Board are, will be, or shall become interested, directly or indirectly, as a contracting party, partner, stockholder, surely or otherwise in the performance of any contract resulting from this solicitation or in the supplies, work or business in connection with any such contract resulting from this solicitation or in the supplies, work or business in connection with any such contract or in any portion thereof, or in any monies to be derived there from.

1.22 PROPRIETARY CONTENT

- .1 Information which the Bidder considers to be of a propriety or confidential nature must be clearly marked "proprietary".

1.23 BRIBERY COLLUSION

- .1 Should a Bidder or any of their agents offer any gratuity to or attempt to bribe any member of the Board, or attempt to commit fraud, the Board shall be at liberty to reject the Bidder's submission or cancel the contract.
- .2 The Bidder further acknowledges that its tender is made without any connection, knowledge, comparison of figures or arrangements with any other company, firm or person making a tender for the same work and is in all respects fair and without collusion or fraud.

1.24 BID ANALYSIS

- .1 Within 3 working days of notification by the Consultant, and prior to award of contract, the low bidder or bidders shall submit a trade by trade breakdown of the bid price for analysis by Consultant.
- .2 Submit additional information promptly if requested by Consultant.
- .3 Requests for information shall not be construed as acceptance of a bid.
- .4 The Board reserves the right to seek clarification from any Bidder without being obligated to all Bidders if it finds certain aspects of a tender unclear.

1.25 IDENTICAL BIDS

- .1 Where more than one compliant tender offering the lowest total cost is received for the same quality of items or services, the contract will be awarded to the bidder as determined by a coin toss.

1.26 NO LIABILITY

- .1 The Bidder agrees that:
- Any action of proceeding relating to this RFT process shall be brought in any court of competent jurisdiction in the Province of Ontario and for that purpose the Bidder irrevocably and unconditionally attorns and submits to the jurisdiction of that Ontario court;
 - It irrevocably waives any right to and shall not oppose any Ontario action or proceeding relating to this RFT process on any jurisdictional basis; and
 - It shall not oppose the enforcement against it, in any other jurisdiction, of any judgement or order duly obtained from an Ontario court as contemplated by this RFT.

- .2 The Bidder further agrees that if the Board commits a material breach of the RFT (that is a material breach of Contract A), the Board's liability to the Bidder, and the aggregate amount of damages recoverable against the Board for any matter relating to or arising from that material breach, whether based upon an action or claim in contract, warranty, equity, negligence, intended conduct or otherwise, including any action or claim arising from the acts or omissions, negligent or otherwise, of the Board, shall be no greater than the tender preparation costs that the Bidder seeking damages from the Board can demonstrate.

1.27 DEBRIEFING

- .1 Bidders are entitled to a debriefing meeting with the tender coordinator after award notification has been made. A request for a debriefing meeting must be received in writing by the tender coordinator within sixty calendar days of award notification. Any request that is not received within sixty days may not be considered at the sole discretion of the Board without reason.
- .2 The purpose of the debriefing meeting is to provide a Bidder with a general overview of the evaluation process set out in the RFT, discuss the strengths and weaknesses of the Bidder's submission in relation to the specific evaluation criteria and the Bidder's score and provide suggestions on how the Bidder may improve future submissions.
- .3 The tender coordinator will also provide the Bidder's relative ranking (e.g. third of five) and a listing of all Bidders who participated in the RFT, including qualified and disqualified Bidders as well as those who submitted "no bid".
- .4 The tender coordinator will address a Bidder's specific questions in relation to their submission. Questions unrelated to the RFT will not be responded to during the debriefing and will be noted as out of scope.
- .5 Debriefing meetings will be held in person at the location of the tender coordinator's agency.

1.28 BID PROTEST PROCEDURES

- .1 Subsequent to a debriefing meeting where a Bidder believes that the competitive process has not been conducted in accordance with the process requirements contained herein, the Bidder may file a bid protest. Bid protests must be submitted in writing citing the clause of the RFT that has not been adhered to in the opinion of the Bidder and the resultant effect on the Bidder's tender.
- .2 Bid protests must be received in writing by the tender Coordinator, allowing the tender coordinator 5 days to investigate and respond to the protest. If the bid protest is not resolved by the tender coordinator, it will be forwarded on to the Superintendent of Business Services by the tender coordinator, allowing the Superintendent of Business Services 10 days to investigate and respond to the bid protest.
- .3 Where the Superintendent of Business Services is unable to resolve the protest, the Superintendent will forward the protest to the Director of Education. The Director of Education, at the Director's discretion, will conduct an investigation of the competitive process. The Director's findings and any resolution shall be final and will be communicated to the Bidder and kept on file.

1.29 GOVERNING LAW

- .1 The RFT, the Bidder's tender, and any resulting agreement will be governed by the laws of Ontario and the federal laws of Canada applicable therein.

1.30 SUBSTITUTIONS

- .1 Bidders shall note that this is a base bid Specification. Products specified or shown on Drawings by Brand name or catalogue number and/or by name of the manufacturer or supplier shall form the basis of the bid. No substitutions shall be considered.
- .2 Bidders may propose substitutions for products under the following conditions:
 - .1 Base bid price is to be based on products specified and/or shown on Drawings.
 - .2 List proposed substitutions under "Bidder's Alternatives" in the appropriate space designated for that purpose on the Bid Form - Section 00 20 00, showing the product name and stating the difference in price, if any, should the proposed substitution be accepted.
 - .3 Owner reserves the right to accept or reject any or all of the proposed substitutions.
- .3 Consultant will not review substitution requests during bidding period.

1.31 COMMUNICATION DURING THE REQUEST FOR TENDER PROCESS

- .1 Communication to Bidders for significant inquiries will be in the way of an electronic amendment. An amendment will take one of two forms:
 - Questions and Clarifications; or
 - Addenda
- .2 Clarifications will be responses to Bidder questions that do not change the RFT documents.
- .3 Addenda are changes to the RFT documents that may impact a Bidder's submission. All addenda must be acknowledged on the Agreement to Contract as indicated.
- .4 To ensure consistency and quality of information provided to Bidders, any information with respect to significant inquiries received and the replies to such inquiries or changes to RFT documents will be provided simultaneously to all Bidders electronically by way of amendment to which this RFT has been sent without revealing the sources of the inquiries.
- .5 Where the Board deems a question to be either insignificant to others or the answer is readily apparent to all Bidders within the document, the Board may choose to respond only to that Bidder.
- .6 Under no circumstances will meetings related to this RFT be held with individual Bidders prior to the closing date and time of this RFT. Non-compliance with this condition will (for that reason alone) will result in disqualification of the Bidder's submission.

1.32 BIDDER REQUEST FOR CLARIFICATION

- .1 It is the responsibility of the Bidder to seek clarification on any matter that they consider unclear before submitting a tender. The Board is not responsible for any misunderstanding of the RFT on the part of a Bidder.
- .2 Bidders must obtain their own information on all matters that may in any way influence them in developing their tender. Bidders must satisfy themselves in all respects as to the risks and obligations to be undertaken by them.
- .3 Written queries only should be directed through Colbourne & Kembel, Architects Inc.
- .4 It will be the responsibility of the Bidder to ensure that it has received a response to the request for clarification before submitting a tender.
- .6 The following apply regarding any request for clarification of any aspect of the RFT
 - a) Questions, inquiries and requests for clarification should be made by the date and time as stated herein;
 - b) Bidders must submit requests for clarifications through Colbourne & Kembel, Architects Inc.;
 - c) In submitting a request for clarification, a Bidder should include its address, telephone number, email address and fax number; and
 - d) Where a question relates to a specific section of this RFT, reference should be made to the specific paragraph number.Inquiries not meeting these conditions may not be responded to.
- .7 In answering a Bidder's questions, the Board will set out the question(s), but without identifying the Bidder that submitted the question(s) the Board may, in its sole discretion,
 - a) Edit the question(s) for clarity;
 - b) Exclude questions that are either unclear or inappropriate; and
 - c) Answer similar questions from various Bidders only once.

1.33 TAXES

- .1 Refer to the General Conditions of the Contract.

1.34 BONDING AND CONSENT OF SURETY

- .1 The successful General Contractor shall be required to furnish a Surety Bond as approved by the C.C.A. from a licensed Canadian Surety Company as follows:
 - **Performance Bond - 50% of the Contract Sum**
 - **Material and Labour Bond – 50% of the Contract Sum**Each Contractor shall include the cost of such Bond in their Bid.
- .2 Bids from General Contractors must be accompanied by a Consent of Surety from an approved Surety Company stating that they will bond the Contractor should he be the successful Bidder. Failure to include such consent form will cause the bid to be declared informal.

1.35 BID BOND

- .1 The Bid shall be accompanied by a Bid Bond, as approved by the C.C.A. from a licensed Canadian Surety Company or a certified cheque made out in favour of the Owner in the

amount of **10% of the bid price**. The Bid Bond shall be valid for a period of 30 days from the date of receipt of Bids.

1.36 INSURANCE

- .1 Provide a signed "Undertaking of Insurance": including Builder Risk on a standard form provided by the insurance company stating their intention to provide insurance to the bidder in accordance with the insurance requirements of the Contract Documents.
- .2 The successful Contractor shall be required to provide Builder's Risk insurance for a minimum value of \$1,000,000.00 or the value of the project, whichever is greater. Each Contractor shall include the cost of such Insurance in his Bid.
- .3 The Owner and Consultant shall be named as additional insured parties.

1.37 TENDER OPENING

- .1 A public opening of submissions for this RFT will be held at **2:15 p.m.** on the date of the closing, as stated herein, at the **Algonquin & Lakeshore Catholic District School Board office, 151 Dairy Avenue, Napanee, ON**. Only the names and total bid amount will be read out. Tender submissions will be reviewed after the tender opening meeting by the tender co-ordinator for compliance. Bidders should not conclude any particular results from the reading. Public opening format is subject to change depending upon COVID19 protocols at time of closing.

1.38 CONSTRUCTION HEALTH & SAFETY

- .1 The Contractor is to provide and allocate in the schedule for Construction Health and Safety COVID-19 provisions as per the current Government of Ontario Guidelines for construction sites for the duration of the project.

END OF SECTION

BID FORM

Submitted to: Algonquin & Lakeshore Catholic District
School Board
151 Dairy Avenue
Napanee Ontario
K7R 4B2
ATT: Brad Hurdis

PROJECT: Holy Cross CSS
1085 Woodbine Road, Kingston

PROJ. NO.: 22016

DATE: _____

1. Bidder

Name: _____

Address: _____

Email: _____

Fax: _____

2. Bid Price

Having examined the Place of Work and bid documents for St. Paul CS Kingston, to perform the Work required by the documents as prepared by Colbourne & Kembel, Architects Inc.

including addenda listed herein, inclusive, we hereby offer to enter into a Contract to perform the Work required by the documents for the Stipulated price of:

_____ dollars. (\$ _____)

in Canadian Funds, which price excludes HST.

Prices are free of escalation clauses.

This offer is valid for a period of thirty (30) days from close of bidding.

Should either party fail to make payments as they become due under the terms of the Contract, interest at 2% per annum above the prime rate for the first 60 days and 4% per annum above the prime rate after the first 60 days on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis. The Bank Rate means the bank rate established by the Bank of Canada as the minimum rate at which the Bank of Canada makes short term advances to the Chartered Banks.

3. Addenda

The following Addenda have been received. The modifications to the Contract Documents noted therein have been considered and all costs thereto are included in the Bid Price.

Addendum # Dated

Addendum # Dated

Addendum # Dated

Addendum # Dated

Addendum # Dated

4. Schedule:

The Contractor hereby declares that they will commence work immediately upon award of Contract and attain Substantial Performance of the Work by August 19, 2022

5. List of Sub-Contractors:

I/We, the undersigned propose that the following Subcontractors and/or suppliers will be used to perform work of this Contract, and I/we confirm that all have been investigated to confirm their reliability and competence to carry out the Work in accordance with the Contract Documents; and I/we agree that no changes from this list may be made without the express written approval of the Owner.

Extra costs to the Contract will not be considered for a Subcontractor/supplier substitution, regardless of the reason, except where a substitution is requested by the Owner.

Item of Work	Subcontractor
Carpentry	
Painting	
Flooring	
Gypsum Board	
Mechanical - Plumbing	
Electrical	
Masonry	

6. Declarations:

We hereby declare that no person, firm, or corporation other than the undersigned has any interest in this Bid or in the proposed Contract for which this Bid is made.

[SIGNATURE PAGE TO FOLLOW]

7. Signatures:

Signed and Submitted for and on behalf of:

name of bidder

Seal:

signature

print name and title of person signing

Witness:

signature

Signature

print name and title of person signing

print name and title of person signing

Date: _____

Note: This Bid form must be signed in one of the following ways:

For a corporation: minimum of one authorized signing officer must sign. The authorized signing officer(s) must also print their name and title in the space provided. Corporate seal to be affixed.

For a Partnership: two Partners must sign. Each partner must also print or type their name and title in the space provided.

For a Sole Proprietorship: The owner of the sole proprietorship, plus one witness, must sign. The owner must also print or type their name and title in the space provided. The witness must clearly print or type their name in the space provided.

Signatures must be clearly visible. Name(s) and title(s) must be legible.

END

**ALCDSB
SUPPLEMENTARY CONDITIONS & AMENDMENTS TO STANDARD CONSTRUCTION DOCUMENT
CCDC2 -2008 STIPULATED PRICE SUBCONTRACT**

(the "Supplementary Conditions")

Revised 2021-07-21

**AGREEMENT, DEFINITIONS, AND
GENERAL CONDITIONS**

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

AGREEMENT BETWEEN OWNER AND CONTRACTOR

Where an Article or General Condition or paragraph of the General Conditions of the *Contract* is deleted by these amendments, the numbering of the remaining General Conditions or paragraphs shall remain unchanged, unless stated otherwise herein, and the numbering of the deleted item will be retained, unused. Reference with these amendments to a paragraph is the paragraph as maybe amended here in.

SC1 ARTICLE A-3 CONTRACT DOCUMENTS

SC1.1 A-3.1 In Article A-3.1, add the following documents to the list of *Contract Documents*:

- Algonquin & Lakeshore Catholic District School Board's Supplementary Conditions & Amendments to Standard Construction Document CCDC2 -2008 Stipulated Price Subcontract, November 2020 Version, including any Special Supplementary Conditions listed in Appendix 2 thereto
- *Drawings*
- *Specifications*
- Performance Bond (Form 32 -Performance Bond under Section 85.1 of the *Act*)
- Labour and Material Payment Bond (Form 31 – Labour and Material Payment Bond under Section 85.1 of the *Act*)

SC2 ARTICLE A-5 PAYMENT

SC2.1 A-5.1 In Article A-5.1, in the first line, after the words "Subject to" insert the words "GC 13.2 and"
-and-
delete the words "and, where such legislation or regulations do not exist or apply, subject to a holdback of percent (%)" and replace them with "and the *Owner's* right to issue Notices of Non-Payment."

SC2.2 5.1.1 In subparagraph 5.1.1, delete the words "amount certified by the *Consultant* together" and replace them with "allowable amount set out in a *Proper Invoice*".

SC2.3 5.1.2 Delete subparagraph 5.1.2 in its entirety and replace it with the following:

"2 upon *Substantial Performance of the Work*, as certified by the *Consultant*, and on the 61st day after the publication of the certificate of *Substantial Performance of the Work* in accordance with the *Act*, there being no claims for lien registered against the title to the *Place of the Work* and no written notices of lien delivered to the *Owner*, pay the *Contractor* the unpaid balance of the holdback together with such *Value Added Taxes* as may be applicable to such payment, less any amount stated in the *Owner's Notice of Non-Payment*,"

SC2.4 5.1.3 Delete subparagraph 5.1.3 in its entirety and replace it with the following:

“.3 upon receipt of the final certificate for payment from the *Consultant*, and on the 61st day after the date on which the *Contractor* completes the *Work*, there being no claims for lien registered against the title to the *Place of the Work* and no written notices of lien delivered to the *Owner*, pay the *Contractor* the unpaid balance of the *Contract Price* together with such *Value Added Taxes* as may be applicable to such payment and”

SC2.5 5.3.1 Delete paragraph 5.3.1 in its entirety and replace it with the following:

“.1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest shall also become due and payable on such unpaid amounts at the prejudgment interest rate prescribed by the Courts of Justice Act (Ontario), as it may change from time to time.”

SC3 *NEW* ARTICLE A-9 CONFLICT OF INTEREST

SC3.1 A-9 Add new ARTICLE A-9 CONFLICT OF INTEREST as follows:

“ARTICLE A-9 CONFLICT OF INTEREST

9.1 *The Contractor, Subcontractors and Suppliers* and any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall not engage in any activity or provide any services where such activity or the provision of such services creates a conflict of interest (actually or potentially, in the sole opinion of the *Owner*) with the provision of the *Work* pursuant to the *Contract*. The *Contractor* acknowledges and agrees that a conflict of interest, as described in this Article A-9, includes, but is not limited to, the use of *Confidential Information* where the *Owner* has not specifically authorized such use.

9.2 The *Contractor* shall disclose to the *Owner*, in writing, without delay, any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest, including the retention of any *Subcontractor* or *Supplier* that is directly or indirectly affiliated with or related to the *Contractor*.

9.3 The *Contractor* covenants and agrees that it will not hire or retain the services of any employee or previous employee of the *Owner* where to do so constitutes a breach by such employee or previous employee of the *Owner's* conflict of interest policy, as it may be amended from time to time, until after completion of the *Work* under the *Contract*.

9.4 It is of the essence of the *Contract* that the *Owner* shall not have direct or indirect liability to any *Subcontractor* or *Supplier*, and that the *Owner* relies on the maintenance of an arm's-length relationship between the *Contractor* and its *Subcontractors and Suppliers*. Consistent with this fundamental term of the *Contract*, the *Contractor* will not enter into any agreement or understanding with any *Subcontractor* or *Supplier*, whether as part of any contract or any written or oral collateral agreement, pursuant to which the parties thereto agree to cooperate in the presentation of a claim for payment against the *Owner*, directly or through the *Contractor*, where such claim is, in whole or in part, in respect of a disputed claim by the *Subcontractor* or *Supplier* against the *Contractor*, where the payment to the *Subcontractor* or *Supplier* by the *Contractor* is agreed to be conditional or contingent on the ability to recover those amounts or a portion thereof from the *Owner*, failing which the *Contractor* shall be saved harmless from all or a portion of those claims. The *Contractor* acknowledges that any such agreement would undermine the required arm's-length relationship and constitute a conflict of interest. For greater certainty, the *Contractor* shall only be entitled to advance claims against the

Owner for amounts pertaining to *Subcontractor* or *Supplier* claims where the *Contractor* has actually paid or unconditionally acknowledged liability for those claims or where those claims are the subject of litigation or binding arbitration between the *Subcontractor* or *Supplier* and the *Contractor* has been found liable for those claims.

- 9.5 Notwithstanding paragraph 7.1.2 of GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT, a breach of this Article A-9 by the *Contractor*, any of the *Subcontractors*, or any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall entitle the *Owner* to terminate the *Contract*, in addition to any other rights and remedies that the *Owner* has in the *Contract*, in law, or in equity."

SC4 *NEW* ARTICLE A-10 TIME OF THE ESSENCE

- SC4.1 A-10 Add the following new Article A-10 as follows

"ARTICLE A-10 TIME OF THE ESSENCE

- 10.1 It is agreed that one of the reasons the *Contractor* was selected by the *Owner* for this *Contract* is the *Contractor's* representation and covenant that it will attain *Substantial Performance of the Work* within the *Contract Time* stated in Article A-1 of this *Contract*.
- 10.2 The *Contractor* acknowledges and agrees that it is responsible to marshal its resources and those of its *Subcontractors* and *Suppliers* in a manner which will permit timely attainment of the *Substantial Performance of the Work*. The *Contractor* agrees that time is of the essence of this *Contract*."

SC5 DEFINITIONS

- SC 5.1 16 Amend Definition 16, "*Provide*" by adding the following words to the end of the definition:

"or supply, install and connect as applicable, complete and in place including accessories, finishes, tests, and services required to render item so specified complete and ready for use."

- SC5.2 Add the following definitions:

- "27. Act**
Act means the Construction Act, R.S.O. 1990, c. C.30, as amended, including all regulations passed under it that are enforceable as of the date of execution of this *Contract*. For certainty, the first procurement process for the *Project* (i.e. the "improvement" as that term is defined in the *Act*) was commenced on or after October 1, 2019)."
- "28. Adjudication**
Adjudication means construction dispute interim *adjudication* as defined under the *Act*."
- "29. Confidential Information**
Confidential Information means all the information or material of the *Owner* that is of a proprietary or confidential nature, whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description (such as drawings and move-lists) which is communicated to or comes into the possession or control of the *Contractor* at any time, but *Confidential Information* shall not include information that:

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

"30. Construction Schedule or construction schedule

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

"31. Construction Schedule Update

Construction Schedule Update means an update to the *Construction Schedule* by the *Contractor* using Microsoft *Project* (or other approved scheduling software) that accurately depicts the progress of the *Work* relative to the critical path established in the *Construction Schedule* approved in GC 3.5.1 (or any approved successor *Construction Schedule*), aligns with the currently approved date for *Substantial Performance of the Work*, shows up-to-date projected major activity sequences and durations, and shows any changes or delays in anticipated completion dates of major activities in the *Work* relative to the last *Construction Schedule Update*, and includes the following minimum deliverables:

- (a) a record version of the updated *Construction Schedule* in .pdf format;
- (b) an editable copy of the updated *Construction Schedule* in native format (e.g. .mpp format for Microsoft *Project*)."

"32. Direct Costs

Direct Costs are the reasonable costs of performing the contract or subcontract including costs related to the additional supply of services or materials (including equipment rentals), insurance and surety bond premiums, and costs resulting from seasonal conditions, that would not have been incurred, but do not include indirect damages suffered, such as loss of profit, productivity or opportunity, or any head office overhead costs."

"33. EFT

EFT has the definition given to it under GC 5.3.2."

"34. Force Majeure

Force Majeure means any cause, beyond either parties' control, other than bankruptcy or insolvency, which prevents the performance by a party, or both, of any of their respective obligations under the *Contract* and the event of *Force Majeure* did not arise from a party's default and could not be avoided or mitigated by the exercise of reasonable effort or foresight. *Force Majeure* includes: *Labour Disputes*; fire; unusual delay by common carriers or unavoidable casualties; delays in obtaining permits or licenses; civil disturbance; emergency acts, orders, legislation, regulations or directives of any government or other public authority; acts of a public enemy; war; riot; sabotage; blockage embargo; lightning; earthquake; adverse weather conditions but only if substantially beyond the weather norms of the *Place of the Work*; acts of God; or declared epidemic or pandemic outbreak or other public health emergency (e.g. SARS, COVID-19)."

- “35. *Install***
Install means install and connect. *Install* has this meaning whether or not the first letter is capitalized.”
- “36. *Labour Dispute***
Labour Dispute means any lawful or unlawful labour problems, work stoppage, labour disruption, strike, job action, slow down, lock-outs, picketing, refusal to work or continue to work, refusal to supply materials, cessation or work or other labour controversy which does, or might, affect the *Work*.”
- “37. *Notice of Non-Payment***
Notice of Non-Payment means a notice of non-payment of holdback (Form 6) or a notice of non-payment (Form 1.1) under the *Act*, as applicable to the circumstances.”
- “38. *OHSA***
OHSA means the Occupational Health and Safety *Act*, R.S.O. 1990, c. O.1, as amended, including all regulations thereto.”
- “39. *Overhead***
Overhead means all site and head office operations and facilities, all site and head office administration and supervision; all duties and taxes for permits and licenses required by the authorities having jurisdiction at the *Place of the Work*; all requirements of Division 1, including but not limited to submittals, warranty, quality control, calculations, testing and inspections; meals and accommodations; travel costs to the place of work , and, tools, expendables and clean-up costs.”
- “40. *Payment Period***
Payment Period has the definition given to it under GC 5.2.1.”
- “41. *Pre-Invoice Submission Meeting***
Pre-Invoice Submission Meeting has the definition given to it under GC 5.2.1.”
- “42. *Proper Invoice***
Proper Invoice means a “proper invoice” as that term is defined in Section 6.1 of the *Act*, including the minimum requirements set out in Appendix “1” of the Supplementary Conditions.”
- “43. *Proper Invoice Submission Date***
Proper Invoice Submission Date has the definition given to it under GC 5.2.2.1.”
- “44. *Request for Information (RFI)***
Request for Information or RFI means written documentation sent by the *Contractor* to the *Owner* or to the *Owner’s* representative or the *Consultant* requesting written clarification(s) and/or interpretation(s) of the *Drawings* and/or *Specifications*, *Contract* requirements and/or other pertinent information required to complete the *Work* of the *Contract* without applying for a change or changes to the *Work*.”
- “45. *Restricted Period***
Restricted Period means the (inclusive) period of time between December 1 to January 8 and August 15 to September 15.”
- “46. *Submittals***
Submittals are documents or items required by the *Contract Documents* to be provided by the *Contractor*, such as:
Shop Drawings, samples, models, mock-ups to indicate details or characteristics, before the portion of the *Work* that they represent can be incorporated into the *Work*; and
As-built drawings and manuals to provide instructions to the operation and maintenance of the *Work*.

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

PART 1 GENERAL PROVISIONS

SC6 GC 1.1 CONTRACT DOCUMENTS

SC6.1 1.1.2 Add to the end of subparagraph 1.1.2.2

“except where the *Consultant* shall be indemnified as a third-party beneficiary as provided in subparagraphs 9.2.7.4, 9.5.3.4 and in 12.1.”

SC6.2 1.1.6 Add the following to the end of paragraph 1.1.6:

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

SC6.3 1.1.7 Delete subparagraph 1.1.7.1 in its entirety and replace it with the following:

“.1 the order of priority of documents, from highest to lowest, shall be:
-The Supplementary Conditions,
-The Agreement between *Owner* and the *Contractor*,
-The Definitions,
-The General Conditions,
-Division 1 of the *Specifications*
-technical *Specifications*
-material and finishing schedules
-the *Drawings*

SC6.4 1.1.7 Add new subparagraphs 1.1.7.5, 1.1.7.6, 1.1.7.7 and 1.1.7.8 as follows:

- “.5 Noted materials and annotations on the *Drawings* shall govern over the graphic representation of the *Drawings*.
- .6 Finishes in the room finish schedules shall govern over those shown on the *Drawings*, but not labelled.
- .7 Architectural drawings shall have precedence over structural, plumbing, mechanical, electrical and landscape drawings insofar as outlining, determining and interpreting conflicts over the required design intent of all architectural layouts and architectural elements of construction, it being understood that the integrity and installation of the systems designed by the *Consultant* or its sub-*Consultants* are to remain with each of the applicable drawing disciplines.
- .8 Should reference standards contained in the *Specifications* conflict with the *Specifications*, the *Specifications* shall govern. Should reference standards and *Specifications* conflict with each other or if certain requirements of the

Specifications conflict with other requirements of the *Specifications*, the more stringent requirements shall govern.”

- SC6.5 1.1.8 Delete paragraph 1.1.8 in its entirety and replace it with the following:
- “1.1.8 The *Owner* shall provide the *Contractor* without charge, 1 PDF copy of the *Contract Documents* to perform the *Work*. Additional copies can be purchased by the *Contractor* at the *Consultant’s* cost of reproduction, handling and sales tax.”
- SC7 GC 1.3 RIGHTS AND REMEDIES**
- SC7.1 1.3.2 In paragraph 1.3.2 delete the word “No” from the beginning of the paragraph and replace it with the words:
- “Except with respect to the requirements set out in paragraphs 2.2.13, 6.4.1, 6.5.4, 6.6.1 and 8.2.2, no...”
- SC8 *NEW* GC 1.5 EXAMINATION OF DOCUMENTS AND SITE**
- SC8.1 GC1.5 Add new GC 1.5 – EXAMINATION OF DOCUMENTS AND SITE as follows:
- “**GC 1.5 EXAMINTION OF DOCUMENTS AND SITE**
- 1.5.1 The *Contractor* declares and represents that in tendering for the *Work*, and in entering into a *Contract* with the *Owner* for the performance of the *Work*, it has investigated for itself the character of the *Work* to be done, based on information generally available from the *Contract Documents*, to the standard set out under GC 3.14.1 The *Contractor* has assumed and does hereby assume all risk of known conditions now existing or arising in the course of the *Work* which might or could make the *Work*, or any items thereof more expensive in character, or more onerous to fulfil, than was contemplated or known when the tender was made or the *Contract* signed.
- 1.5.2 The *Contractor* also declares that in tendering for the *Work* and in entering into this *Contract*, the *Contractor* did not and does not rely upon information furnished by the *Owner* or any of its agents or servants respecting the nature or confirmation of the ground at the site of the *Work*, or the location, character, quality or quantity of the materials to be removed or to be employed in the construction of *Work*, or the character of the construction machinery and equipment or facilities needed to perform the *Work*, or the general and local performance of the work under the *Contract* and expressly waives and releases the *Owner* from all claims with respect to the said information with respect to the *Work*.
- 1.5.3 *Contractor* further represents, warrants and acknowledges that it considered and took into account in the *Contract Price* all reasonably known impacts and restrictions arising from the COVID-19 pandemic, including without limitation corresponding legislative changes that may impact performance of the *Project*, various weather conditions that may affect the *Work*, the availability of supplies and labour or other conditions or risks that the *Contractor* knew about or reasonably ought to have known about prior to the date of the *Contract*.”

PART 2 ADMINISTRATION OF THE CONTRACT

SC9 GC 2.2 ROLE OF THE CONSULTANT

- SC9.1 2.2.4 Delete paragraph 2.2.4 in its entirety.
- SC9.2 2.2.5 Delete paragraph 2.2.5 and replace it with the following:
- “2.25 Upon receipt of an application for payment that satisfies the requirement of a *Proper Invoice*, based on the *Consultant's* observations and evaluation of the *Contractor's* application for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 - PAYMENT, GC 5.3 PROGRESS PAYMENT, GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK, and GC 5.7 - FINAL PAYMENT. If the *Consultant* determines that the amount payable to the *Contractor* differs from the amount stated in a *Proper Invoice*, the *Consultant* shall notify the *Owner* as provided in GC 5.3.1.2 and prepare a draft of the applicable *Notice of Non-Payment* for the amount in dispute.”
- SC9.3 2.2.7 In 2.2.7, delete the words “Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER”.
- SC9.4 2.2.9 “Add at the end of paragraph 2.2.9. “The *Owner* and the *Contractor* shall waive any claims against the *Consultant* arising out of the making of such interpretations and findings made in accordance with paragraphs 2.2.7, 2.2.8, 2.2.9”.
- SC9.5 2.2.13 In paragraph 2.2.13, insert the following at end of the paragraph:
- “If, in the opinion of the *Contractor*, the *Supplemental Instruction* involves an adjustment in the *Contract Price* or in the *Contract Time*, it shall, within ten (10) *Working Days* of receipt of a *Supplemental Instruction*, provide the *Consultant* with a notice in writing to that effect. Failure to provide written notification within the time stipulated in this paragraph 2.2.13 shall be deemed an acceptance of the *Supplemental Instruction* by the *Contractor*, without any adjustment in the *Contract Price* or *Contract Time*.”
- SC9.6 2.2.14 In paragraph 2.2.14 delete the comma after the word “submittals” and add the words “that are provided” .

SC10 GC 2.3 REVIEW AND INSPECTION OF THE WORK

- SC10.1 2.3.2 Amend paragraph 2.3.2 by adding the words “and *Owner*” after the words “*Consultant*” in the second and third lines.
- SC10.2 2.3.3 Delete paragraph 2.3.3 in its entirety and replace it with the following:
- “2.3.3 The *Contractor* shall furnish promptly two copies to the *Consultant* and one copy to the *Owner* of all certificates and inspection reports relating to the *Work*.”
- SC10.3 2.3.4 In paragraph 2.3.4 add the word “review” after the word “inspections” in the first and second lines of paragraph 2.3.4.
- SC10.4 2.3.5 In paragraph 2.3.5 in the first line after the word “*Consultant*”, add “or the *Owner*”.
- SC10.5 2.3.8 Add a new paragraph 2.3.8 as follows:

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

SC11 GC 2.4 DEFECTIVE WORK

SC11.1 2.4.1 Amend GC 2.4.1 by:

adding the words "at their own expense," after "The *Contractor* Shall" in the first line - and -
inserting ", the *Owner* and/or its agent" in the first sentence following "rejected by the *Consultant*".

SC11.2 2.4.1 Add new subparagraphs 2.4.1.1 and 2.4.1.2 as follows:

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

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

SC11.3 2.4.2 Delete paragraph 2.4.2 in its entirety and replace it with the following:

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

SC11.4 2.4.4 Add new paragraph 2.4.4 as follows:

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

PART 3 EXECUTION OF THE WORK

SC12 GC 3.1 CONTROL OF THE WORK

SC12.1 3.1.2 Amend paragraph 3.1.2 by inserting the words "Construction Schedule" after the word "sequences".

SC12.2 3.1 Add new paragraphs 3.1.3 and 3.1.4 as follows:

"3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the *Contractor* shall verify at the *Place of the Work*, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the *Work*

and shall further carefully compare such field measurements and conditions with the requirements of the *Contract Documents*. Where dimensions are not included or exact locations are not apparent, the *Contractor* shall immediately notify the *Consultant* in writing and obtain written instructions from the *Consultant* before proceedings with any part of the affected *Work*.

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

SC13 GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

SC13.1 3.2.2 Delete subparagraphs 3.2.2.1, 3.2.2.2, 3.2.2.3, and 3.2.2.4 in their entirety.

SC13.2 3.2.3 Delete subparagraph 3.2.3.2 and replace it with the following:

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

SC13.3 3.2.3 Add new subparagraph 3.2.3.4 as follows:

"4 Subject to GC 9.4 CONSTRUCTION SAFETY, for the *Owner's* own forces and for other contractors, assume overall responsibility for compliance with all aspects of the applicable health and safety legislation in force at the *Place of the Work*, including all of the responsibilities of the "constructor", pursuant to the *OHSA*."

SC14 GC 3.3 TEMPORARY WORK

SC14.1 3.3.2 In paragraph 3.3.2, in the second line after the words "where required by law", insert "or by the *Consultant*".

SC15 GC 3.4 DOCUMENT REVIEW

SC15.1 3.4.1 Delete paragraph 3.4.1 in its entirety and replace it with the following:

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

SC15.2 3.4 Add new paragraphs 3.4.2, and 3.4.3 as follows:

"3.4.2 If, at any time, the *Contractor* finds errors, inconsistencies, or omissions in the *Contract Documents* or has any doubt as to the meaning or intent of any part thereof, including laying out of the *Work*, the *Contractor* shall immediately notify the *Consultant*, and request instructions, a *Supplemental Instruction*, *Change Order*, or *Change Directive*, as the case may require, and the *Contractor* shall not proceed with the work affected until the *Contractor* has received such instructions, a *Supplemental Instruction*,

Change Order or Change Directive. Neither the *Owner* nor the *Consultant* will be responsible for the consequences of any action of the *Contractor* based on oral instructions.

- 3.4.3 Notwithstanding the foregoing, inconsistencies and omissions shall not include lack of reference on the drawings or in the specifications to labour and/or *Products* that are required or normally recognized within respective trade practices as being necessary for the complete execution of the *Work*."

SC16 GC 3.5 CONSTRUCTION SCHEDULE

SC16.1 3.5.1 Delete paragraph 3.5.1 in its entirety and replace with the following:

"3.5.1 The *Contractor* shall:

- .1 within five (5) calendar days of receiving written confirmation of the award of the *Contract*, prepare and submit to the *Owner* and the *Consultant* for their review and approval, a *construction schedule* in the format indicated below that indicates the timing of the activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time* and in accordance with the *Contract Documents*. Such schedule shall include: (i) a delivery schedule for *Products* whose delivery is critical to the schedule for the *Work* or are required by the *Contract* to be included in a *Products* delivery schedule; (ii) a schedule indicating times for items to be delivered or performed under cash allowances; and (iii) a schedule for the installation of *Owner* purchased items to be installed by the *Contractor*. The *Contractor* shall employ construction scheduling software, being the latest version of "Microsoft *Project*", that permits the progress of the *Work* to be monitored in relation to the critical path established in the schedule. The *Contractor* shall provide such schedule and any successor or revised schedules in both electronic format and hard copy. Once accepted by the *Owner* and the *Consultant*, the *construction schedule* submitted by the *Contractor* shall become the baseline "*Construction Schedule*";
- .2 provide the expertise and resources, such resources including manpower and equipment, as are necessary on a best efforts basis to maintain progress under the accepted baseline *Construction Schedule* or revised *construction schedule* accepted by the *Owner* pursuant to GC 3.5 CONSTRUCTION SCHEDULE, which includes without limitation, the *Contractor's* use of all possible and, if necessary, extraordinary measures, to bring the progress of the *Work* into compliance with the *Construction Schedule*, such as (i) increasing the presence of its own forces at the *Place of the Work*; (ii) directing any *Subcontractors* or *Suppliers* to increase their labour forces and equipment; (iii) working overtime and extra shifts; and (iv) providing any additional supervision and coordination of the *Project*, all at the *Contractor's* own cost and expense save and except where GC 6.5.1, 6.5.2, or 6.5.3 apply; and,
- .3 monitor the progress of the *Work* on a weekly basis relative to the baseline *Construction Schedule*, or any revised *Construction Schedule* accepted by the *Owner* pursuant to GC 3.5 CONSTRUCTION SCHEDULE, deliver a *Construction Schedule Update* to the *Consultant* and *Owner* with each application for payment, at a minimum, or as may be reasonably required by the *Consultant* and advise the *Consultant* and the *Owner* weekly in writing of any variation from the baseline or slippage in the schedule; and,
- .4 if after applying the expertise and resources required under paragraph 3.5.1.2, the *Contractor* forms the opinion that the slippage in schedule reported in paragraph 3.5.1.3 cannot be recovered by the *Contractor*, it shall, in the same notice provided under paragraph 3.5.1.3, indicate to the *Consultant* if the *Contractor* intends to apply

for an extension of *Contract Time* as provided in PART 6 —CHANGES IN THE WORK; and,

.5 ensure that the *Contract Price* shall include all costs required to phase or stage the *Work*.”

SC16.2 3.5 Add new paragraphs 3.5.2 and 3.5.3 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 schedule or is likely to become behind schedule, or if the *Contractor* has given notice of such to the *Owner* or the *Consultant* pursuant to subparagraph 3.5.1.3, the *Contractor* shall, either at the request of the *Owner* or the *Consultant*, or following giving notice pursuant to subparagraph 3.5.1.3, take appropriate steps to cause the actual progress of the *Work* to conform to the schedule or minimize the resulting delay. Within five (5) calendar days of the request by the *Owner* or the *Consultant* or the notice being given pursuant to subparagraph 3.5.1.3, the *Contractor* shall produce and present to the *Owner* and the *Consultant* a plan demonstrating how the *Contractor* will achieve the recovery of the last accepted schedule.

3.5.3 The *Contractor* is responsible for performing the *Work* within the *Contract Time*. Any schedule submissions revised from the accepted baseline *construction schedule* or revised schedule accepted by the *Owner* pursuant to GC 3.5 CONSTRUCTION SCHEDULE, during construction are not deemed to be approved extensions to the *Contract Time*. All extensions to the *Contract Time* must be made in accordance with PART 6 – CHANGES IN THE WORK. “

SC17 GC 3.6 SUPERVISION

SC17.1 3.6.1 Delete paragraph 3.6.1 in its entirety and replace with the following:

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

SC17.2 3.6.2 Delete paragraph 3.6.2 in its entirety and replace with the following:

“3.6.2 The superintendent, and any project manager appointed by the *Contractor*, shall represent the *Contractor* at the Place of *Work* and shall have full authority to *Act* on written instructions given by the *Consultant* and/or the *Owner*. Instructions given to the superintendent or the project manager shall be deemed to have been given to the *Contractor* and both the superintendent and any project manager shall have full authority to *Act* on behalf of the *Contractor* and bind the *Contractor* in matters related to the *Contract*.”

SC17.3 3.6 Add new paragraph 3.6.3, 3.6.4, 3.6.5 and 3.6.6 as follows:

“3.6.3 The *Owner* may, at any time during the course of the *Work*, request the replacement of the appointed representative(s). Immediately upon receipt of the request, the *Contractor* shall make arrangements to appoint an acceptable replacement, which is approved by the *Owner*.

- 3.6.4 The supervisory staff assigned to the *Project* shall also be fully competent to implement efficiently all requirements for scheduling, coordination, field engineering, reviews, inspections and submittals defined in the *Specifications*, and have a minimum 5 years documented "Superintendent/*Project* Management" experience.
- 3.6.5 The *Consultant and Owner* shall reserve the right to review the record of experience and credentials of supervisory staff assigned to the *Project* prior to commencement of the *Work*.
- 3.6.6 A superintendent assigned to the *Work* shall be "Gold Seal Certified" as per the Canadian Construction Association; or a superintendent that can demonstrate the requisite experience and success related to the *Project* to the sole satisfaction of the *Owner*."

SC18 GC 3.7 SUBCONTRACTORS AND SUPPLIERS

- SC18.1 3.7.1 In subparagraph 3.7.1.1 add to the end of the second line the words "including any warranties and service agreements which extend beyond the term of the *Contract*."
- SC18.2 3.7.1 In subparagraph 3.7.1.2 after the words "the *Contract Documents*" add the words "including any required surety bonding".
- SC18.3 3.7.2 Delete paragraph 3.7.2. in its entirety and replace it with the following:
- "3.7.2 The substitution of any *Subcontractor* and/or *Suppliers* after submission of the *Contractor's* bid will not be accepted unless a valid reason is given in writing to and approved by the *Owner*, whose approval may be arbitrarily withheld. The reason for substitution must be provided to the *Owner* and to the original *Subcontractor* and/or *Supplier* and the original *Subcontractor* and/or *Supplier* shall be given the opportunity to reply to the *Contractor* and *Owner*. The *Contractor* shall be fully aware of the capability of each *Subcontractor* and/or *Supplier* included in its bid, including but not limited to technical ability, financial stability and ability to maintain the proposed *construction schedule*."
- SC18.4 3.7 Add new paragraphs 3.7.7, and 3.7.8 as follows:
- "3.7.7 The *Consultant* or the *Owner*, acting reasonably, may from time to time require the *Contractor* to remove from the *Project* any personnel of the *Contractor*, including project managers, superintendents or *Subcontractors*. Such persons shall be replaced by the *Contractor* in a timely fashion to the satisfaction of the *Consultant* or the *Owner*, as the case may be, at no cost to the *Owner*.
- 3.7.8 The *Contractor* covenants that each subcontract or supply contract which the *Contractor* enters into for the purpose of performing the *Work* shall expressly provide for the assignment thereof to the *Owner* (at the option of the *Owner*) and the assumption by the *Owner* of the obligations of the *Contractor* thereunder, upon the termination of the *Contract* and upon written notice by the *Owner* to the other parties to such subcontracts or supply contracts, without the imposition of further terms or conditions; provided, however, that until the *Owner* has given such notice, nothing herein contained shall be deemed to create any contractual or other liability upon the *Owner* for the performance of obligations under such subcontracts or supply contracts and the *Contractor* shall be fully responsible for all of its obligations and liabilities (if any) under such subcontracts and supply contracts."

SC19 GC 3.8 LABOUR AND PRODUCTS

SC19.1 3.8.2 Delete paragraph 3.8.2 and replace with the following:

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

SC19.2 3.8.3 Amend paragraph 3.8.3 by adding the words, “agents, *Subcontractors* and *Suppliers*” after the word “employees” in the first line.

SC19.3 3.8 Add new paragraphs 3.8.4, 3.8.5, 3.8.6, 3.8.7, 3.8.8 and 3.8.9 as follows:

“3.8.4 Upon receipt of a *Notice in Writing* from the *Owner*, the *Contractor* shall immediately remove from the *Place of the Work*, tradesmen and labourers or anyone whose conduct jeopardizes the safety of the *Owner's* operations or who are considered by the *Owner* or the *Consultant* to be unskilled or otherwise objectionable. Immediately upon receipt of the request, the *Contractor* shall make arrangements to appoint an acceptable replacement.

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

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

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

3.8.8 Materials, appliances, equipment and other *Products* are sometimes specified by reference to brand names, proprietary names, trademarks or symbols. In such cases, the name of a manufacturer, distributor, *Supplier* or dealer is sometimes given to assist the *Contractor* to find a source *Supplier*. This shall not relieve the *Contractor* from its responsibility from finding its own source of supply even if the source names no longer supplies the *Product* specified. If the *Contractor* is unable to obtain the specified *Product*, the *Contractor* shall supply a substitute product equal to or better than the specified *Product*, as approved by the *Consultant* with no extra compensation. Should

the *Contractor* be unable to obtain a substitute *Product* equal to or superior to the specified *Product* and the *Owner* accepts a different *Product*, the *Contract Price* shall be adjusted accordingly, as approved by the *Consultant*.

- 3.8.9 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*. The *Owner* shall provide all relevant information on the *Products* to be supplied by *Owner*."

SC20 GC 3.9 DOCUMENTS AT THE SITE

- SC20.1 3.9.1 Delete paragraph 3.9.1 in its entirety and replace with the following:

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

SC21 GC 3.10 SHOP DRAWINGS

- SC21.1 3.10 Add "and *Submittals*" after the words "shop drawings" in paragraphs 3.10.4, 3.10.7, 3.10.8, 3.10.10, 3.10.11, and 3.10.12.

- SC21.2 3.10.1 Delete paragraph 3.10.1 in its entirety and replace with the following:

"3.10.1 The *Contractor* shall provide shop drawings and submittals as described in the *Contract Documents* and as the *Consultant* may reasonably request."

- SC21.3 3.10.3 Delete paragraph 3.10.3 and replace it with the following:

"3.10.3 The *Contractor* shall prepare a *Shop Drawings* and *Submittals* schedule acceptable to the *Owner* and the *Consultant* prior to the first application for payment. A draft of the proposed *Shop Drawings* and *Submittals* schedule shall be submitted by the *Contractor* to the *Consultant* and the *Owner* for approval. The draft *Shop Drawings* and *Submittals* schedule shall clearly indicate the phasing of *Shop Drawings* and *Submittals* submissions. The *Contractor* shall periodically re-submit the *Shop Drawings* and *Submittals* schedule to correspond to changes in the *Construction Schedule*."

- SC21.4 3.10.9 Delete paragraph 3.10.9 in its entirety and replace with the following:

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

- SC21.5 3.10 Add new paragraphs 3.10.13, 3.10.14, 3.10.15, 3.10.16, and 3.10.17 as follows:

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

3.10.14 Except where the parties have agreed to a different *Shop Drawings* and *Submittals* schedule pursuant to paragraph 3.10.3, the *Contractor* shall comply with the requirements for *Shop Drawings* and *Submittals* submissions stated in the *Specifications*.

- 3.10.15 The *Contractor* shall not use the term “by others” on *Shop Drawings* and *Submittals* or other submittals. The related trade, *Subcontractor* or *Supplier* shall be stated.
- 3.10.16 Certain *Specifications* sections require the *Shop Drawings* to bear the seal and signature of a professional engineer. Such professional engineer must be registered in the jurisdiction of the *Place of the Work* and shall have expertise in the area of practice reflected in the *Shop Drawings*.
- 3.10.17 The *Consultant* will review and return *Shop Drawings* and submittals in accordance with the schedule agreed upon in paragraph 3.10.3, The *Contractor* shall allow the *Consultant* a minimum of 10 *Working Days* to review *Shop Drawings* and *Submittals* from the date of receipt. If resubmission of *Shop Drawings* and *Submittals* is required, a further 10 *Working Day* period is required for the *Consultant*’s review.”

SC22 GC 3.11 USE OF THE WORK

- SC22.1 3.11.1 In the second line of 3.11.1 between the words “permits, or” add, “by direction of the *Owner* or *Consultant*”.
- SC22.2 3.11 Add new paragraph 3.11.3 as follows:
- “3.11.3 The *Owner* shall have the right to enter or occupy the *Work* in whole or in part for the purpose of placing fittings and equipment, or for other use before *Substantial Performance of the Work*, if, in the opinion of the *Consultant*, such entry and occupation does not prevent or substantially interfere with the *Contractor* in the performance of the *Contract* within the *Contract Time*. Such entry or occupation shall neither be considered as acceptance of the *Work*, nor in any way relieve the *Contractor* from its responsibility to complete the *Contract*.”

SC23 GC 3.12 CUTTING AND REMEDIAL WORK

- SC23.1 3.12 Add new paragraphs 3.12.5 and 3.12.6 as follows:
- “3.12.5 Unless specifically stated otherwise in the *Specifications*, the *Contractor* shall do all cutting and making good necessary for the proper installation and performance of the *Work*.
- 3.12.6 To avoid unnecessary cutting, the *Contractor* shall lay out its work and advise the *Subcontractors*, when necessary, where to leave holes for installation of pipes and other work.”

SC24 GC 3.13 CLEAN UP

- SC24.1 3.13 At the end of the paragraph 3.13.1, add the following:
- “The *Contractor* shall remove accumulated waste and debris at least once a week as a minimum or as required by the nature of the *Work*.
- SC24.2 3.13.2 In paragraph 3.13.2, in the fourth line add the word “materials” between the word “tools” and the words “*Construction Equipment*”.
- SC24.3 3.13.3 In paragraph 3.13.3, in the first and second lines add the word “materials” between the Word “tools” and the words “*Construction Equipment*”
-and-
In paragraph 3.13.3 delete the words “Prior to application for the final payment,” and replace them with “As a condition precedent to submitting its application for final payment,”.
- SC24.4 3.13 Add new paragraphs 3.13.4, 3.13.5, 3.13.6, and 3.13.7 as follows:

- "3.13.4 The *Contractor* shall clean up garbage during and after construction and maintain the *Place of the Work* in a neat and orderly condition on a daily basis. Prior to leaving the *Place of the Work* and following completion of the *Work*, the *Contractor* shall make good all damage to the building and its components caused by the performance of the *Work* or by any *Subcontractor* or *Supplier*. The *Contractor* shall leave the *Place of the Work* in a clean and finished state; remove all *Construction Equipment* and materials; remove all paint, stains, labels, dirt, etc. from the *Place of the Work*; and touch up all damaged painted areas (if applicable). The *Contractor* shall be responsible for restoring those areas of the *Place of the Work*, impacted by the *Work*, to their original condition.
- 3.13.5 Without limitation to or waiver of the *Owner's* other rights and remedies, the *Owner* shall have the right to back charge to the *Contractor* the cost of damage to the site caused by transportation in and out of the *Place of the Work* by the *Contractor*, *Subcontractors* or *Suppliers*, if not repaired before final payment.
- 3.13.6 The *Contractor* shall dispose of debris at a location and in a manner acceptable to the *Owner* (and to the authorities having jurisdiction at the *Place of the Work* and at the disposal area)
- 3.13.7 In the event of any dispute regarding the removal of waste products and debris, the *Owner* may remove the waste and debris and charge the cost to the *Contractor* to the extent that the *Consultant* shall determine to be reasonable."

SC25 *NEW* GC 3.14 CONTRACTOR STANDARD OF CARE

SC25.1 3.14 Add a new GC 3.14 – CONTRACTOR STANDARD OF CARE as follows:

"GC 3.14 CONTRACTOR STANDARD OF CARE

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

SC26 *NEW* GC 3.15 OCCUPANCY OF THE WORK

SC26.1 3.15 Add a new GC 3.15 – OCCUPANCY OF THE WORK as follows:

“GC 3.15 OCCUPANCY OF THE WORK

3.15.1 The *Owner* reserves the right to take possession of and use for any intended purpose any portion or all of the undelivered portion of the *Project* even though the *Work* may not be substantially performed, provided that such taking possession and use will not interfere, in any material way, with the progress of the *Work*. The taking of possession or use of any such portion of the *Project* shall not be deemed to be the *Owner's* acknowledgement or acceptance of the *Work* or the *Project*, nor shall it relieve the *Contractor* of any of its obligations under the *Contract*

3.15.2 Whether the *Project* contemplates *Work* by way of renovations in buildings which will be in use or be occupied during the course of the *Work* or where the *Project* involves *Work* that is adjacent to a structure which is in use or is occupied, the *Contractor*, without in any way limiting its responsibilities under the *Contract*, shall take all reasonable steps to avoid interference with fire exits, building access and egress, continuity of electric power and all other utilities, the operation of HVAC systems, to suppress dust and noise and to avoid conditions likely to propagate mould or fungus of any kind and all other steps reasonably necessary to promote and maintain the safety and comfort of the users and occupants of such structures or adjacent structures.”

PART 4 ALLOWANCES

SC27 GC 4.1 CASH ALLOWANCES

SC27.1 4.1.1 Delete the second sentence in paragraph 4.1.1.

SC27.2 4.1. Delete paragraph 4.1.4 in its entirety and replace it with the following:

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

SC27.3 4.1 Delete paragraph 4.1.5 in its entirety and substitute the following:

“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.”

SC27.4 4.1.7 Delete paragraph 4.1.7 in its entirety.

SC27.5 4.1 Add new paragraphs 4.1.8, 4.1.9 and 4.1.10 as follows:

“4.1.8 The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work*, which are to be paid for from cash allowances.

4.1.9 Cash allowances cover the net cost to the *Contractor* of services, *Products*, *Construction Equipment*, freight, unloading, handling, storage, installation, provincial sales tax, and other authorized expenses incurred in performing any *Work* stipulated under the cash allowances but does not include any *Value Added Taxes* payable by the *Owner* and the *Contractor*.

- 4.1.10 Purchases from cash allowances must be authorized by written instructions issued by the *Consultant*. The form and method of accounting for costs shall be agreed to by the *Consultant* and *Contractor* before proceeding with the purchase “.

PART 5 PAYMENT

SC28 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

- SC28.1 5.1 Delete GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER and All paragraphs thereunder, including any reference to GC 5.1 throughout the *Contract*.

SC29 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

- SC29.1 5.2 Delete paragraph 5.2.1 and replace it with the following:

“5.2.1 Upon execution of the *Contract*, and in any event prior to the *Contractor* submitting its first application for payment, the *Owner* shall issue a purchase order to the *Contractor* for the performance of the *Contract*. The number indicated on such purchase order must be clearly identifiable on all applications for payment. Applications for payment shall be dated the last day of each month or an alternative day of each month agreed to in writing by the parties, with each month representing one payment period under the *Contract* (each a “*Payment Period*”). Within 3 calendar days of the end of each *Payment Period*, the *Contractor* will submit a draft application for payment to the *Owner* and the *Consultant*. Upon receipt of the draft application for payment, and within 7 business days, a representative of each of the *Contractor*, *Owner*, and the *Consultant* shall attend a meeting to discuss and review the work completed during the *Payment Period*, including quantities, if applicable (the “*Pre-Invoice Submission Meeting*”). In the event that the scheduled date for the *Pre-Invoice Submission Meeting* is not a *Working Day*, the *Pre-Invoice Submission Meeting* shall occur on the next *Working Day*. The *Contractor* shall bring with it to the *Pre-Invoice Submission Meeting* the following:

- .1 a copy of the draft application for payment;
- .2 any documents the *Contractor* is required to bring to the *Pre-Invoice Submission Meeting* as stipulated in the *Contract Documents* or as reasonably requested by the *Owner*; and
- .3 any other documents reasonably requested, in advance, by the *Owner* or the *Consultant*.”

- SC29.2 5.2 Delete paragraph 5.2.2 in its entirety and replace it with the following:

“5.2.2 Applications for payment shall be given in accordance with the following requirements:

- .1 within 5 calendar days following the *Pre-Invoice Submission Meeting*, the *Contractor* shall deliver its application for payment to the *Owner* and to the *Consultant* for *Work* performed during the *Payment Period* (“*Proper Invoice Submission Date*”) subject to the following:
- .2 if the fifth calendar day following the *Pre-Invoice Submission Meeting*, to which an invoice relates falls on a day that is not a *Working Day*, the *Proper Invoice Submission Date* shall be deemed to fall on the next *Working Day*.
- .3 the application for payment must be delivered to the *Owner* and to the *Consultant* in the same manner as a *Notice in Writing* during the hours of 9:00 am to 4:00pm (EST) on the *Proper Invoice Submission Date*. Delivery to the *Owner* shall be to the following address:

Algonquin & Lakeshore Catholic District School Board
151 Dairy Avenue, Napanee Ontario K7R 4B2
bhurdis@alcdsb.on.ca

Colbourne & Kembel, Architects Inc.
739 D Arlington Park Place, Kingston Ontario K7M 8M8
info@ckai.ca

.4 If an application for payment is received after 4:00 p.m. (EST) on the applicable *Proper Invoice Submission Date*, the application for payment will not be considered or reviewed by the *Owner* and *Consultant* until the next *Proper Invoice Submission Date*. Notwithstanding the foregoing, the *Owner* in its sole and absolute discretion may elect to accept an application for payment submitted after 4:00 p.m. on the applicable *Proper Invoice Submission Date*; however, such acceptance shall not be construed as a waiver of any of its rights or waive or release the *Contractor's* obligations to strictly comply with the requirements prescribed in this subparagraph 5.2.2.3.

.5 No applications for payment shall be accepted by the *Owner* prior to the *Proper Invoice Submission Date*."

SC29.3 5.2 Delete paragraph 5.2.3 and replace it with the following:

"5.2.3 The amount claimed shall be for the value, proportionate to the amount of the *Contract*, of *Work* performed and *Products* delivered and incorporated into the *Work* as of the last date of the applicable *Payment Period*. Materials may also be deemed to be supplied to an improvement, for payment purposes, when, in the *Owner's* opinion, they are placed and properly secured on the land on which the improvement is made, or placed upon land designated by the *Owner* or agent of the *Owner*, but placing the materials on the land so designated does not, of itself, make that land subject to a lien. No amount claimed shall include products delivered and incorporated into the work, unless the products are free and clear of all security interests, liens and other claims of third parties. No amount claimed shall include *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."

SC29.4 5.2.4 After the word "*Consultant*" in paragraph 5.2.4 add the words "and the *Owner*"

SC29.5 5.2.5 After the word "*Consultant*" in the first line of paragraph 5.2.5 add the words "or the *Owner*"

-and-

In the second line, delete the word "*Consultant*" and replace it with "*Owner*".

SC29.6 5.2.7 Delete paragraph 5.2.7 and replace it with the following:

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

SC30 GC 5.3 PROGRESS PAYMENT

SC30.1 5.3.1 Add the following words to the end of subparagraph 5.3.1.1:

".1 and confirm whether all of the criteria for a *Proper Invoice* are satisfied. If not, the application for payment will be returned to the *Contractor* with reasons from the *Owner* or the *Consultant* setting out why the application for payment is not a valid *Proper Invoice*."

SC30.2	5.3.1	<p><u>Delete</u> paragraph 5.3.1.2 and <u>replace</u> it with the following:</p> <p>“.2 Following receipt of a <i>Proper Invoice</i>, the <i>Consultant</i>:</p> <p>.1 will issue to the <i>Owner</i> with a copy to the <i>Contractor</i>, a certificate for payment in the amount applied for, or</p> <p>.2 if the <i>Consultant</i> finds that such other amount is properly due under the application for payment or otherwise finds that the application for payment must be amended, it shall notify the <i>Owner</i> and prepare an applicable <i>Notice of Non-Payment</i> (Form 1.1) with reasons for the amendment.”</p>
SC30.3	5.3.1	<p><u>Delete</u> subparagraph 5.3.1.3 in its entirety and <u>replace</u> with the following:</p> <p>“.3 the <i>Owner</i> shall make payment to the <i>Contractor</i> on account no later than 28 calendar days after the receipt by the <i>Owner</i> of a <i>Proper Invoice</i>, subject to the delivery by the <i>Owner</i> of a <i>Notice of Non-Payment</i> (Form 1.1).”</p>
SC30.4	5.3	<p><u>Add</u> new paragraphs 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.6, and 5.3.7 as follows:</p> <p>“5.3.2 All payments to the <i>Contractor</i> shall be processed using electronic funds transfer (“<i>EFT</i>”) and deposited directly to the <i>Contractor’s</i> bank account unless agreed to otherwise by the <i>Contractor</i> and the <i>Owner</i> in writing. Prior to the <i>Contractor</i> submitting its <i>Proper Invoice</i>, the <i>Owner</i> shall provide the <i>Contractor</i> with the necessary documents to facilitate <i>EFT</i> payments.</p> <p>5.3.3 Payment shall be deemed to have been made to the <i>Contractor</i> on the date in which funds are transferred via <i>EFT</i> to the <i>Contractor’s</i> bank account.</p> <p>5.3.4 In the event that the <i>Owner</i> disputes the amount claimed as payable in the <i>Proper Invoice</i>, within 14 calendar days of receipt of the <i>Proper Invoice</i>, the <i>Owner</i> shall provide to the <i>Contractor</i>, a <i>Notice of Non-Payment</i> (Form 1.1).</p> <p>5.3.5 Where the <i>Owner</i> has delivered a <i>Notice of Non-Payment</i>, as specified under paragraph 5.3.1.3 or 5.3.4, the <i>Owner</i> and the <i>Contractor</i> shall first engage in good faith negotiations to resolve the dispute. If within 10 calendar days following the issuance of a <i>Notice of Non-Payment</i>, the <i>Owner</i> and the <i>Contractor</i> cannot resolve the dispute, either party may issue a notice of <i>adjudication</i> in a form prescribed under the <i>Act</i>. The <i>Owner</i> and <i>Contractor</i> will then submit the dispute to <i>Adjudication</i> as set out under PART 8 – DISPUTE RESOLUTION.</p> <p>5.3.6 The amounts disputed and described under the <i>Notice of Non-Payment</i> shall be held by the <i>Owner</i> until all disputed amounts of the <i>Proper Invoice</i> have been resolved pursuant to PART 8 – DISPUTE RESOLUTION. Any portion of the <i>Proper Invoice</i> which is not the subject of the <i>Notice of Non-Payment</i> shall be payable within the time period set out in paragraph 5.3.1.3.</p> <p>5.3.7 The <i>Contractor</i> represents, warrants, and covenants to the <i>Owner</i> that it is familiar with its prompt payment and trust obligations under the <i>Act</i> and will take all required steps and measures to ensure that it complies with the applicable prompt payment and trust provisions under the <i>Act</i> including, without limitation, section 8.1 of the <i>Act</i>. Evidence of the <i>Contractor’s</i> compliance under this GC 5.3.7, including evidence demonstrating that all <i>EFTs</i> by the <i>Owner</i> to the <i>Contractor</i> are kept in a bank account in the <i>Contractor’s</i> name, will be made available to the <i>Owner</i> within 5 <i>Working Days</i> following receipt by the <i>Contractor</i> of a <i>Notice in Writing</i> making such request.”</p>
SC31	GC 5.4	SUBSTANTIAL PERFORMANCE OF THE WORK
SC31.1	5.4.2	<p><u>Delete</u> paragraph 5.4.2 in its entirety and <u>replace</u> with the following:</p>

- "5.4.2 The *Consultant* will review the *Work* to verify the validity of the application and shall promptly, and in any event, no later than 30 calendar days after receipt of the *Contractor's* complete deficiency list and application:
- .1 prepare a final deficiency list incorporating all items to be completed or corrected. Each item is to have an indicated value for correction or completion. Determination of the value for *Substantial Performance of the Work* is defined in GC 5.10 – DEFICIENCY HOLDBACK. The final deficiency list complete with values is to be included with the *Consultant's* draft verification and shall be reviewed with the *Owner* prior to 5.4.2.2.
 - .2 having completed 5.4.2.1:
 - .1 the *Consultant* shall advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
 - .2 the *Consultant* shall state the date of *Substantial Performance of the Work* in a certificate and issue a copy of that certificate to each the *Owner* and the *Contractor*."
- SC31.2 5.4.3 Delete paragraph 5.4.3 in its entirety and substitute the following:
- "5.4.3 Following the issuance of the certificate of *Substantial Performance of the Work* referenced in subparagraph 5.4.2.2.2:
- .1 the *Contractor* shall complete the *Work* within sixty (60) calendar days; save and except only for those items that cannot be reasonably completed within 60 days as determined by the *Consultant* in accordance with paragraph 5.4.2.1.
 - .2 no payments will be processed nor will any *Proper Invoices* be received by the *Owner* between *Substantial Performance of the Work* and the completion of the *Work*;
 - .3 The *Owner* reserves the right to contract out any or all unfinished *Work* if it has not been completed within sixty (60) days of *Substantial Performance of the Work* without prejudice to any other right or remedy and without affecting the warranty period. The cost of completing the *Work* including *Owner* and *Consultant* wages and materials shall be deducted from the *Contract Price*."
- SC31.3 5.4 Add new paragraphs 5.4.4, 5.4.5 and 5.4.6:
- "5.4.4 The *Contractor* shall publish, in a construction trade newspaper in the area of the location of the *Work*, a copy of the certificate of *Substantial Performance of the Work* referred to in GC 5.4.2.2.2 within seven (7) days of receiving a copy of the certificate signed by the *Consultant*, and the *Contractor* shall provide suitable evidence of the publication to the *Consultant* and the *Owner*. If the *Contractor* fails to publish such notice, the *Owner* shall be at liberty to publish said certificate and back-charge the *Contractor* its reasonable costs for doing so.
- 5.4.5 Prior to submitting its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant*:
- .1 statutory declaration in the form of CCDC 9;
 - .2 WSIB clearance certificate showing good standing;
 - .3 updated insurance certificate;
 - .4 guarantees;
 - .5 warranties;
 - .6 certificates;
 - .7 final testing and balancing reports;
 - .8 distribution system diagrams;
 - .9 spare parts;
 - .10 maintenance manuals;

- .11 samples;
- .12 reports and correspondence from authorities having jurisdiction in the *Place of the Work*;
- .13 shop drawings;
- .14 inspection certificates;
- .15 red-lined record drawings from the construction trailer in two copies.
- .16 occupancy checklist, noting premises capable to be occupied as per the Ontario Building Code.

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

- 5.4.6 The *Owner* shall withhold, from amounts otherwise payable to the *Contractor*, an amount not to exceed one (1) percent of the *Contract Price* as security for the obligation of the *Contractor* to deliver two copies of the red-lined record drawings."

SC32 GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- SC32.1 5.5.1 Add new subparagraph 5.5.1.3 as follows:

"3 submit a statement that no written notices of lien have been received by the *Contractor*."

- SC32.2 5.5 Amend paragraph 5.5.2 by adding the following sentences to the end of that paragraph:

"Where after thirty (30) days following the publication of the certificate of *Substantial Performance of the Work*, pursuant to GC 5.4.4, the value of the *Work* remaining to be complete under the *Contract*, plus the estimated cost to repair any remaining deficiencies, exceeds the amount of the unpaid balance of the *Contract Price* (as determined by the Payment Certifier, acting reasonably), the *Owner* may publish a *Notice of Non-Payment* of holdback in accordance with the *Act* (Form 6) and retain an amount from the holdback to supplement the unpaid value of the *Contract Price* to secure the correction of deficiencies and completion of the *Work*. Such amounts may include all *Consultant* and *Owner* costs including any and all staff and material costs, design, tendering and contractor and supplier costs related to the correction of deficiencies and/or warranty claims."

- SC32.3 5.5.3 Delete paragraph 5.5.3 in its entirety.

- SC32.4 5.5.4 Delete the first and second sentences in paragraph 5.5.4 and replace them with the following:

"There being no claims for lien registered against title to the *Place of the Work*, as confirmed by a title search of the *Place of the Work* and there being no claims for lien or written notices of lien delivered to the *Owner*, the holdback amount authorized by the certificate for payment of the holdback amount issued by the *Consultant*, pursuant to GC 5.5.2, is due and payable on the 61st calendar day following the publication of the certificate of *Substantial Performance of the Work* referred to in GC 5.4.4. "

- SC32.5 5.5.5 Delete paragraph 5.5.5 in its entirety and replace it with the following:

"5.5.5 Notwithstanding the *Owner's* obligation to make payment of the holdback amount in accordance with GC 5.5.4, the processing of such payment remains subject to the *Owner's* internal *EFT* timing limitations. The *Owner* covenants, and the *Contractor* agrees, that payment of the holdback shall be made by *EFT* at the first opportunity during the *Owner's* normal processing of *EFTs* upon the holdback becoming due in accordance with GC 5.5.4."

SC33 GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

SC33.1 5.6 Delete GC 5.6 in its entirety.

SC34 GC 5.7 FINAL PAYMENT

SC34.1 5.7.1 In paragraph 5.7.1, delete the words “an application for final payment” and replace them with the following:

“an application for final payment that complies with the requirements for a *Proper Invoice* accompanied by any documents or materials not yet delivered pursuant to paragraph 5.4.5, together with complete and final as-built drawings. The *Contractor* shall also provide written certification that there are no outstanding claims, pending claims or future claims from the *Contractor* or their *Subcontractors* or *Suppliers*. The *Consultant* shall promptly inform the *Owner* of the receipt of the application for final payment and confirm whether all of the criteria for a *Proper Invoice* are satisfied. If not, the application for payment will be returned to the *Contractor* with reasons from the *Owner* or the *Consultant* setting out why it is not a valid *Proper Invoice*.”

SC34.2 5.7.2 In paragraph 5.7.2: delete the words “advise the *Contractor* in writing that the application is valid or give reasons why it is not valid.” and replace them with the following:

“.1 no later than 10 calendar days after the receipt of the *Proper Invoice* for final payment, the *Consultant* will issue to the *Owner* and copy to the *Contractor*, a certificate for final payment in the amount applied for, or

.2 if the *Consultant* finds that such other amount is properly due under the *Proper Invoice* for final payment or otherwise finds that the *Proper Invoice* for final payment must be amended, it shall notify the *Owner* and prepare a draft Notice of Non-Payment (Form 1.1) with reasons for the amendment.”

SC34.3 5.7.3 Delete paragraph 5.7.3 in its entirety and replace it with the following:

“5.7.3 Where the *Owner* has delivered a *Notice of Non-Payment*, as specified under paragraph 5.7.2, the *Owner* and the *Contractor* shall first engage in good faith negotiations to resolve the dispute. If within 10 calendar days following the issuance of a *Notice of Non-Payment*, the *Owner* and *Contractor* cannot resolve the dispute, either party may issue a notice of *adjudication* in a form prescribed under the *Act*. The *Owner* and *Contractor* will then submit the dispute to *Adjudication* as set out under PART 8 – DISPUTE RESOLUTION.”

SC34.4 5.7.4 Delete from the second line of paragraph 5.7.4 the words, “5 calendar days after the issuance of” and replace the words “28 calendar days after receipt of a *Proper Invoice* for final payment, subject to the delivery by the *Owner* of a *Notice of Non-Payment* (Form 1.1)”.

SC34.5 5.7.5 Add new paragraph 5.7.5 as follows:

“5.7.5 The amounts disputed and described under the *Notice of Non-Payment* shall be held by the *Owner* until all disputed portions of the *Proper Invoice* for final payment have been resolved pursuant to PART 8 – DISPUTE RESOLUTION. Any portion of the *Proper Invoice* which is not the subject of the *Notice of Non-Payment* shall be payable within the time period set out in paragraph 5.7.4.”

SC35 GC 5.8 WITHHOLDING OF PAYMENT

SC35.1 5.8.1 Delete paragraph 5.8.1 and replace with the following:

"If because of conditions reasonably beyond the control of the *Contractor*, there are items of work that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, subject to its requirement to issue a *Notice of Non-Payment* under the *Act*, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such remaining work. The remaining work shall be valued as deficient work as defined in GC 5.10.1."

SC36*NEW* GC 5.10 DEFICIENCY HOLDBACK

SC36.1 Add new GC 5.10 – DEFICIENCY HOLDBACK as follows:

"GC 5.10 DEFICIENCY HOLDBACK

Notwithstanding any provisions contained in the *Contract Documents* concerning certification and release of monies to the *Contractor*, the *Owner* reserves the right to establish a deficiency holdback, at the time of the review for Substantial Performance of the *Work*, based on a 200% dollar value of the deficiencies listed by the *Consultant*. The value of work outstanding for the calculation of *Substantial Performance of the Work* under the *Act* shall utilize the 100% dollar value. No individual deficiency will be valued at less than two hundred dollars (\$200.00). The deficiency holdback shall be due and payable to the *Contractor* on the 61st day following completion of all of the deficiencies listed by the *Consultant*, there being no claims for lien registered against the title to the *Place of the Work* issued in accordance with the *Act*, and less any amounts disputed under an *Owner's Notice of Non-Payment* (Form 1.1)."

PART 6 CHANGES IN THE WORK

SC37 GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

SC37.1 6.1.2 Add the following to the end of paragraph 6.1.2:

"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* and/or *Contract Time* shall be barred unless there has been strict compliance with PART 6 - CHANGES IN THE WORK. No verbal dealings between the parties and no implied acceptance of alterations or additions to the *Work* and no claims that the *Owner* has been unjustly enriched by any alteration or addition to the *Work*, whether in fact there is any such unjust enrichment or not, shall be the basis of a claim for additional payment under this *Contract* or a claim for any extension of the *Contract Time*."

SC37.2 6.1 Add new paragraphs 6.1.3, 6.1.4, 6.1.5, 6.1.6, 6.1.7 and 6.1.8 as follows:

"6.1.3 The *Contractor* agrees that changes resulting from construction coordination, including but not limited to, site surface conditions, site coordination, and *Subcontractor* and *Supplier* coordination are included in the *Contract Price* and the *Contractor* shall be precluded from making any claim for a change in the *Contract Price* as a result of such changes.

6.1.4 Labour costs shall be actual, prevailing rates at the *Place of the Work* paid to workers, plus statutory charges on labour including WSIB, unemployment insurance, Canada pension, vacation pay, hospitalization and medical insurance. The *Contractor* shall provide these rates, when requested by the *Consultant*, for review and/or agreement.

6.1.5 Quotations for changes to the *Work* shall only include *Direct Costs* and be accompanied by itemized breakdowns together with detailed, substantiating quotations or cost vouchers from *Subcontractors* and *Suppliers*, submitted in a format acceptable to the *Consultant* and shall include any *Direct Costs* associated with extensions in *Contract Time*.

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

SC38 GC 6.2 CHANGE ORDER

- SC38.1 6.2.1 In paragraph 6.2.1 after the last sentence in the paragraph add the following:
- "The adjustment in the *Contract Time* and the *Contract Price* shall include an adjustment, if any, for delay or for the impact that the change in the *Work* has on the *Work* of the *Contractor*, and once such adjustment is made, the *Contractor* shall be precluded from making any further claims for delay or impact with respect to the change in the *Work*."
- SC38.2 6.2 Add new paragraphs 6.2.3, 6.2.4, and 6.2.5 as follows :
- "6.2.3 .1 The value of a change shall be determined in one or more of the following methods as directed by the *Consultant*:
- 1) by estimate and acceptance of a lump sum;
 - 2) by negotiated unit prices which include the *Contractor's* overhead and profit, or;
 - 3) by the actual Direct Cost to the *Owner*, such costs to be the actual cost after all credits included in the change have been deducted, plus the following ranges of mark- up on such costs:
- .1 for Change Orders with a value of \$0 to \$15,000 the total combined *Subcontractor/Supplier* mark-up including *Overhead* and profit shall be 15% and the total *Contractor* mark-up including overhead and profit shall be 15% on their own work and 10% on the work of subtrades/suppliers.
 - .2 for Change Orders in excess of \$15,000, the total combined combined *Subcontractor/Supplier* mark-up including *Overhead* and profit on the portion exceeding \$15,000 shall be 7%, and the total *Contractor* mark-up including overhead and profit on the portion exceeding \$15,000 shall be 7% on their own work and 4% on the work of subtrades/suppliers.
 - .3 If a change in the *Work* results in a net decrease in the *Contract Price* of \$15,000 or less, the amount of the credit shall be the net cost, without a credit for *Overhead* or profit.
 - .4 If a change in the *Work* results in a net decrease in the *Contract Price* in excess of \$15,000, the amount of the credit shall be the net cost, plus a credit of 7% on *Overhead* and profit. on the portion exceeding \$15,000.

- .2 The above markup including percentages for overhead and profit shall include all costs for job supervisors, job superintendents, project management, administrative personnel, site overhead, office overhead, site measuring, estimating, bonding, insurance, financing, building permit, as-built drawings, site facilities, safety, clean-up, equipment, tools, travel costs to the Place of *Work*, and other job administration charges related to the change and not directly relating to site labour or materials. Additional costs for bonding or insurance may be included in the value of any change, without mark-up, provided that documentation is provided to the *Owner* to substantiate and verify the additional costs. Supporting documentation shall include, but not be limited to, written verification of a new certificate of insurance or bond identifying the variance in cost. The *Owner*, in its sole discretion, will determine whether the documentation is sufficient to warrant and pay for additional costs for bonding or insurance. If approved by the *Owner*, additional costs for bonding or insurance may be claimed by the *Contractor* as separate item on Change Order."
- .3 Labour costs shall be the actual rates paid to the workers plus a documented mark-up (not exceeding 60% of actual wage rates) to cover contributions, assessments, or taxes incurred for such items as unemployment and other insurance, provincial health insurance, *Workers' Compensation*, Canada or Quebec Pension Plan, Holiday & Vacation Pay, traveling Time, Travel and Parking, Welfare, Union, Industry training and Pension Funds, rest periods, down time, personal hygiene, personal protection, small tool and the like. Travel time to and from site shall be at no charge to the owner.
- .4 Breakdown shall show areas and quantities on which costs are based, unit costs for labour and material, wage burdens and other direct costs, and all information necessary for a complete understanding of the costs submitted. In the case of changes involving *Subcontractors'* quotations shall be provided in support of each claim for extra or credit offered. *Subcontractors'* quotations shall be broken down as specified above.
- .5 The *Contractor* is obliged to review and consider the value and validity of *Subcontractors* and suppliers quotations to be used as backup for proposed *Change Order* pricing before submission to the *Consultant*. The *Contractor* shall ensure that only valid, and fair and reasonable costs are submitted to the *Consultant*. The *Consultant* will not directly negotiate with *Subcontractors* and *Suppliers* on behalf of the *Contractor*. The *Contractor* shall maintain financial oversight of the *Subcontractors* and *Suppliers* and filter out unreasonable claims.
- .6 Unit and alternative prices included in the *Contract* include supply, installation, *Products*, *Construction Equipment*, services, materials, labour, overhead and profit, but exclude *Value Added Taxes* and Provincial Sales Tax.
- .7 The *Owner* through the *Consultant*, reserves the right to authorize payment for changes in the *Work* by means of cash allowance disbursement authorizations.
- .8 If any change or deviation in, or omission from the *Work* is made by which the amount of *Work* to be performed is decreased, or if the whole or a portion of the *Work* is dispensed with, no compensation is claimable by the *Contractor* for any loss of anticipated profit in respect thereof.
- .9 Should the *Contractor* proceed with any change in the method of construction, volume or location of the *Work* which has not been both ordered and valued as set out above, or as a *Change Directive*, it shall be conclusively presumed that the parties were in agreement that such change should be made at no additional cost to the *Owner*.
- .10 A change order signed by the *Contractor* indicates his complete agreement therewith, including the adjustment if any, in the *Contract Price* and the *Contract Time*. *Contractor* agrees that in no event shall he make any subsequent claim relating to the items covered by such change order, either regarding the *Contract*

Price, or the *Contract Time*. Except as permitted in GC 6.3.5, the *Contractor* shall not bill for changes in the *Work* until after a *Change Order* has been executed by the *Contractor*, *Consultant*, and *Owner*.

- 6.2.4 All quotations shall include *Direct Costs* and be submitted in a complete manner listing:
- .1 quantity of each material,
 - .2 unit cost of each material,
 - .3 man hours involved,
 - .4 labour cost per hour,
 - .5 *Subcontractor* quotations submitted listing items 1 to 4 above and item 6 below.
 - .6 mark-up.
- 6.2.5 The *Owner* and the *Consultant* will not be responsible for delays to the *Work* resulting from late, incomplete or inadequately broken-down valuations submitted by the *Contractor*."

SC39 GC 6.3 CHANGE DIRECTIVE

- SC39.1 6.3.6 Delete Paragraph 6.3.6 and replace with the following:
- "6.3.6 The adjustment in the *Contract Price* for a change carried out by way of a Change Directive shall be determined in accordance with 6.2.3 to 6.2.5."
- SC39.2 6.3.7 Delete Paragraph 6.3.7 and replace with the following.
- "6.3.7 The *Contractor* shall present in a form acceptable to the *Consultant* an amount of adjustment for the *Contract Price*, if any, and an adjustment in the *Contract Time*, if any, for the changes covered by a *Change Directive*."

SC40 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

- SC40.1 6.4.1 In subparagraph 6.4.1.1: replace "materially" with "substantially" in the second line.
-and-
In subparagraph 6.4.1.2: replace "materially" with "substantially" in the first line.
- SC40.2 6.4.2 In subparagraph 6.4.2: replace "materially" with "substantially" in the second line.
- SC40.3 6.4.3 In subparagraph 6.4.3: replace "materially" with "substantially" in the first line.
- SC40.4 6.4.5 Add new subparagraph 6.4.5 as follows:
- "6.4.5 The *Contractor* confirms that, prior to bidding the *Project*, it carefully investigated the *Place of the Work* and applied to that investigation the degree of care and skill described in paragraph 3.14.1. The *Contractor* is not entitled to compensation or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such careful investigation undertaken prior to the submission of the bid."

SC41 GC 6.5 DELAYS

- SC41.1 6.5.1 In paragraph 6.5.1 delete the words after the word "for" in the fourth line and replace them with the words:

- “reasonable *Direct Costs* directly flowing from the delay, but excluding any consequential, indirect or special damages (including, without limitation, loss of profits, loss of opportunity or loss of productivity).”
- SC41.2 6.5.2 In paragraph 6.5.2, delete the words “not issued as the result of an *Act* or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly,” and replace them with:
- “issued on account of a direct breach, violation, contravention, or a failure to abide by any laws, ordinances, rules, regulations, or codes by the *Owner*, the *Owner’s* other contractor(s), or the *Consultant*, and relating to the *Work* or the *Place of the Work*,”
-and-
- delete the words after the word “for” in the fourth line of paragraph 6.5.2, and replace them with the words “reasonable *Direct Costs* directly flowing from the delay, but excluding any consequential, indirect or special damages (including, without limitation, loss of profits, loss of opportunity or loss of productivity).”
- SC41.3 6.5.3 Delete paragraph 6.5.3 in its entirety and replace with the following:
- “6.5.3 If either party is delayed in the performance of their obligations under this *Contract* by *Force Majeure*, then the *Contract Time* shall be extended for such reasonable time as the *Owner* and the *Contractor* shall agree. The extension of time shall not be less than the time lost as a result of the event causing the delay, unless the parties agree to a shorter extension. Neither party shall be entitled to payment for costs incurred by such delays. Upon reaching agreement on the extension of the *Contract Time* attributable to the *Force Majeure* event, the *Owner* and the *Contractor* shall execute a *Change Order* indicating the length of the extension to the *Contract Time* and confirming that there are no costs payable by the either party for the extension of *Contract Time*. However, if at the time an event of *Force Majeure* arises a party is in default of its obligations under the *Contract* and has received a notice of default pursuant to PART 7 – DEFAULT NOTICE, this paragraph 6.5.3 shall not excuse a party from its obligation to cure the default(s). For greater certainty, the defaulting party, to the extent possible, must continue to address and cure the default notwithstanding an event of *Force Majeure*.”
- SC41.4 6.5.4 Delete paragraph 6.5.4 in its entirety and replace it with the following:
- “6.5.4 No extension or compensation shall be made for delay or impact on the *Work* unless notice in writing of a claim is given to the *Consultant* not later than ten (10) *Working Days* after the commencement of the delays or impact on the *Work*, provided however, that, in the case of a continuing cause of delay or impact on the *Work*, only one notice of claim shall be necessary.”
- SC41.5 6.5 Add new paragraphs 6.5.6, 6.5.7 and 6.5.8 as follows:
- “6.5.6 If the *Contractor* is delayed in the performance of the *Work* by an *Act* or omission of the *Contractor* or anyone directly or indirectly employed or engaged by the *Contractor*, or by any cause within the *Contractor’s* control, then (i) firstly, at its expense, and to the extent possible, the *Contractor* shall accelerate the work and/or provide overtime work to recover time lost by a delay arising under this paragraph 6.5.6, and (ii) secondly, where it is not possible for the *Contractor* to recover the time lost by implementing acceleration measures and/or overtime work, the *Contract Time* may be extended for such reasonable time as the *Owner* may decide in consultation with the *Consultant* and the *Contractor*. The *Owner* shall be reimbursed by the *Contractor* for all reasonable costs incurred by the *Owner* as the result of such delay, including, but not limited to, *Owner’s* staff costs, the cost of all additional services required by the *Owner* from the *Consultant* or any sub-consultants, project managers, or others employed or engaged by the *Owner*, and in particular, the costs of the *Consultant’s* services during the period between the date of *Substantial Performance of the Work* stated in Article A-1 herein, as the same may be extended through the provision of these General Conditions, and any later or actual date of *Substantial Performance of the Work* achieved by the *Contractor*.

6.5.7 Without limiting the obligations of the *Contractor* described in GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS or GC 9.4 – CONSTRUCTION SAFETY, the *Owner* or *Consultant* may, by *Notice in Writing*, direct the *Contractor* to stop the *Work* where the *Owner* or *Consultant* determines that there is an imminent risk to the safety of persons or property at the *Place of the Work*. In the event that the *Contractor* receives such notice, it shall immediately stop the *Work* and secure the site. The *Contractor* shall not be entitled to an extension of the *Contract Time* or to an increase in the *Contract Price* unless the resulting delay, if any, would entitle the *Contractor* to an extension of the *Contract Time* or the reimbursement of the *Contractor's* costs as provided in paragraphs 6.5.1, 6.5.2 or 6.5.3.

6.5.8 No claim for delay shall be made and the *Contract Time* shall not be extended due to climatic conditions that are normal to the *Place of Work* or arising from the *Contractor's* efforts to maintain the *Construction Schedule*."

SC42 GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

SC 42.1 6.6.5 Delete paragraph 6.6.5. in its entirety and replace with new paragraph 6.6.5. as follows:

"6.6.5 The *Consultant's* findings, with respect to a claim made by either party will be given by *Notice in Writing* by the *Consultant* to both parties within reasonable time after receipt of the claim information noted in paragraph 6.6.3."

SC42.2 6.6.7 Add new paragraph 6.6.7 as follows:

"6.6.7 The *Owner* shall be reimbursed for all costs incurred for additional services provided by the *Consultant* resulting from the *Contractor's* failure to reasonably perform the *Work* in accordance with the terms and conditions of the *Contract*, including the *Contractor's* issuance of unnecessary Requests for Information. The *Consultant* will notify the *Owner* and *Contractor* where it has been determined by the *Consultant* that additional services will be required or have been provided in order not to cause a delay. The *Owner* shall be entitled to make claims for the reimbursement of its costs, including costs and expenses incurred by the *Consultant*."

PART 7 DEFAULT NOTICE

SC43 GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

SC43.1 7.1.1 In paragraph 7.1.1.; add the words "or if they should fail to comply substantially with the construction schedule" after the second "insolvency" in the second line.

SC43.2 7.1.3 In subparagraph 7.1.3.1, add the words "and is diligently proceeding with" after the "commences" in the first line.

SC43.3 7.1.3 Add a new subparagraph 7.1.3.4 as follows:

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

SC43.4 7.1.4 Delete subparagraph 7.1.4.1 and replace it with the following:

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

- SC43.5 7.1.4 Delete subparagraph 7.1.4.2 and replace it with the following:
- “2 by providing *Notice in Writing* to the *Contractor*, terminate the *Contractor's* right to continue with the *Work* in whole or in part or terminate the *Contract*, and publish a notice of termination (Form 8) in accordance with the *Act*.”
- SC43.6 7.1.5 In subparagraph 7.1.5.3 delete the words: “however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference”
- SC43.7 7.1.6 Delete paragraph 7.1.6 in its entirety.
- SC43.8 7.1 Add new paragraphs 7.1.6, 7.1.7, 7.1.8, 7.1.9 and 7.1.10 as follows:
- “7.1.6 In addition to its right to terminate the *Contract* set out herein, the *Owner* may terminate this *Contract* at any time for any other reason and without cause upon giving the *Contractor* fifteen (15) *Working Days Notice in Writing* to that effect. In such event, the *Contractor* shall be entitled to be paid for all *Work* performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*, but in no event shall the *Contractor* be entitled to be compensated for any loss of profit on unperformed portions of the *Work*, or indirect, special, or consequential damages incurred.
- 7.1.7 The *Owner* may suspend *Work* under this *Contract* at any time for any reason and without cause upon giving the *Contractor Notice in Writing* to that effect. In such event, the *Contractor* shall be entitled to be paid for all *Work* performed to the date of suspension and be compensated for all actual costs incurred arising from the suspension, including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the suspension of the *Work*, but in no event shall the *Contractor* be entitled to be compensated for any indirect, special, or consequential damages incurred. In the event that the suspension continues for more than thirty (30) calendar days, the *Contract* shall be deemed to be terminated and the provisions of paragraph 7.1.6 shall apply.
- 7.1.8 In the case of either a termination of the *Contract* or a suspension of the *Work* under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall use its best commercial efforts to mitigate the financial consequences to the *Owner* arising out of the termination or suspension, as the case may be.
- 7.1.9 Upon the resumption of the *Work* following a suspension under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* will endeavour to minimize the delay and financial consequences arising out of the suspension.
- 7.1.10 The *Contractor's* obligations under the *Contract* as to quality, correction, and warranty of the *Work* performed by the *Contractor* up to the time of termination or suspension shall continue after such termination of the *Contract* or suspension of the *Work*.”

SC44	GC 7.2	CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT
SC44.1	7.2.2	<p><u>Delete</u> paragraph 7.2.2 and <u>replace</u> it with the following:</p> <p>"If the <i>Work</i> is suspended or otherwise delayed for a period of 40 consecutive <i>Working Days</i> or more under a stop work order issued by a court or other public authority on account of a breach, violation, contravention, or a failure to abide by any laws, ordinances, rules, regulations, or codes directly by the <i>Owner</i>, the <i>Owner's</i> other contractor(s), or the <i>Consultant</i>, and relating to the <i>Work</i> or the <i>Place of the Work</i>, the <i>Contractor</i> may, without prejudice to any other right or remedy the <i>Contractor</i> may have, terminate the <i>Contract</i> by giving the <i>Owner Notice in Writing</i> to that effect."</p>
SC44.2	7.2.3	<p><u>Delete</u> subparagraph 7.2.3.1 in its entirety.</p>
SC44.3	7.2.3	<p><u>Delete</u> subparagraph 7.2.3.2 in its entirety.</p>
SC44.4	7.2.3	<p>In subparagraph 7.2.3.4, <u>delete</u> the words "except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER".</p>
SC44.5	7.2.5	<p><u>Renumber</u> paragraph 7.2.5 as paragraph 7.2.6. and <u>add</u> a new paragraph 7.2.5 as follows:</p>
	"7.2.5	<p>If the default cannot be corrected within the 5 <i>Working Days</i> specified in paragraph 7.2.4, the <i>Owner</i> shall be deemed to have cured the default if it:</p> <p>.1 commences correction of the default within the specified time;</p> <p>.2 provides the <i>Contractor</i> with an acceptable schedule for such correction; and,</p> <p>.3 completes the correction in accordance with such schedule."</p>
SC44.6	7.2.6	<p><u>Delete</u> paragraph 7.2.6 entirely and <u>replace</u> with the following:</p>
	"7.2.6	<p>If the <i>Contractor</i> terminates the <i>Contract</i> under the conditions described in GC 7.2 – CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the <i>Contractor</i> shall be entitled to be paid for all <i>Work</i> performed to the date of termination, as determined by the <i>Consultant</i>. The <i>Contractor</i> shall also be entitled to recover the direct costs associated with termination, including the costs of demobilization and losses sustained on <i>Products</i> and <i>Construction Equipment</i>. The <i>Contractor</i> shall not be entitled to any recovery for any special, indirect or consequential losses, including loss of profit."</p>
SC44.7	7.2	<p><u>Add</u> new paragraphs 7.2.7, 7.2.8 and 7.2.9 as follows:</p>
	"7.2.7	<p>The <i>Contractor</i> shall not be entitled to give notice of the <i>Owner's</i> default or terminate the <i>Contract</i> in the event the <i>Owner</i> withholds certificates or payment or both in accordance with the <i>Contract</i> because of:</p> <p>.1 the <i>Contractor's</i> failure to pay all legitimate claims promptly, or</p> <p>.2 the failure of the <i>Contractor</i> to discharge construction liens which are registered against the title to the <i>Place of the Work</i>.</p>
	7.2.8	<p>The <i>Contractor's</i> obligations under the <i>Contract</i> as to quality, correction and warranty of the <i>Work</i> performed by the <i>Contractor</i> up to the effective date of termination shall continue in force and shall survive termination of this <i>Contract</i> by the <i>Contractor</i>.</p>
	7.2.9	<p>If the <i>Contractor</i> suspends the <i>Work</i> or terminates the <i>Contract</i> as provided for in GC 7.2 – CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE</p>

CONTRACT, the *Contractor* shall ensure the site and the *Work* are left in a safe, secure condition as required by authorities having jurisdiction at the *Place of the Work* and the *Contract Documents*."

PART 8 DISPUTE RESOLUTION

SC45 GC 8.1 AUTHORITY OF THE CONSULTANT

SC45.1 8.1.3 Delete paragraph 8.1.3 in its entirety and replace with the following:

"If a dispute is not resolved promptly, the *Consultant* will give such instruction as in the *Consultant's* opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall *Act* immediately according to such instructions, it being understood that by doing so neither party will jeopardize any claim the party may have."

SC46 GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

SC46.1 8.2.1 Amend paragraph 8.2.1 by changing part of the second line from "shall appoint a *Project Mediator*" to "may appoint a *Project Mediator*, except that such an appointment shall only be made if both the *Owner* and the *Contractor* agree."

SC46.2 8.2.4 Amend paragraph 8.2.4 by changing part of the second line from "the parties shall request the *Project Mediator*" to "and subject to paragraph 8.2.1 the parties may request the *Project Mediator*".

SC46.3 8.2 Delete paragraphs 8.2.6, 8.2.7 and 8.2.8 in their entirety.

SC46.4 8.2.6 Add new paragraph 8.2.6 as follows:

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

SC46.5 8.2 Add new paragraphs 8.2.9, 8.2.10, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.2.15, 8.2.16, and 8.2.17 as follows:

"8.2.9 Prior to delivering a notice of *Adjudication* in a form prescribed by the *Act*, the parties agree to first address all disputes by attending at least one meeting with the *Owner's* representative, the *Consultant's* representative, and the *Contractor's* representative, prior to commencing an *Adjudication*. The parties agree that such steps will be taken to resolve any disputes in a timely and cost effective manner. If a resolution to the dispute(s) is not made at such a meeting, any party who plans to commence an *Adjudication* shall provide the other party with 5 *Working Days' Notice in Writing* of its intention to issue a notice of *Adjudication*."

8.2.10 Other than where the *Contractor* is obliged to commence an *Adjudication* pursuant to an undertaking under the *Act*, neither the *Owner* nor the *Contractor* shall commence an *Adjudication* during the *Restricted Period*.

8.2.11 Where either party has delivered a notice of *Adjudication* in a form prescribed by the *Act*, the procedures and rules set out under the *Act* and the regulations thereto shall govern the *Adjudication*.

8.2.12 Within five days of receipt of the notice of arbitration by the responding party under paragraph 8.2.6, the *Owner* and the *Contractor* shall give the *Consultant* a written notice containing:

- a) a copy of the notice of arbitration
 - b) a copy of supplementary conditions 8.2.9 to 8.2.16 of this *Contract*, and;
 - c) 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
- 8.2.13 The *Owner* and the *Contractor* agree that the *Consultant* may elect, within ten days of receipt of the notice under paragraph 8.2.12, to become a full party to the arbitration under paragraph 8.2.6 if the *Consultant*:
- a) has a vested or contingent financial interest in the outcome of the arbitration;
 - b) gives the notice of election to the *Owner* and the *Contractor* before the arbitrator is appointed;
 - c) agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.2.6, and,
 - d) agrees to be bound by the arbitral award made in the arbitration.
- 8.2.14 If an election is made under paragraph 8.2.13, 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 the respondent receives a copy of the notice of arbitration.
- 8.2.15 The arbitrator in the arbitration in which the *Consultant* has elected under paragraph 8.2.13 to become a full party may:
- a) on application of the *Owner* or the *Contractor*, determine whether the *Consultant* has satisfied the requirements of paragraph 8.2.13, and;
 - b) make any procedural order considered necessary to facilitate the addition of the *Consultant* as a party to the arbitration.
- 8.2.16 The provisions of paragraph 8.2.9 shall apply mutatis mutandis to written notice to be given by the *Consultant* to any sub-consultant;
- 8.2.17 In the event of notice of arbitration given by the *Consultant* to a sub-consultant, the sub-consultant is not entitled to any election with respect to the proceeding as outlined in 8.2.13, and is deemed to be bound by the arbitration proceeding."

PART 9 PROTECTION OF PERSONS AND PROPERTY

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| SC47 | GC 9.1 | PROTECTION OF WORK AND PROPERTY |
|-------------|---------------|--|
- SC47.1 9.1.1 Delete subparagraph 9.1.1.1 in its entirety and replace with the following:
- "1 errors in the *Contract Documents* which the *Contractor* could not have discovered applying the standard of care described in paragraph 3.14.1"
- SC47.2 9.1.2 Delete paragraph 9.1.2 in its entirety and replace with the following:
- "9.1.2 Before commencing any *Work*, the *Contractor* shall determine the locations of all underground or hidden utilities and structures indicated in or inferable from the *Contract Documents*, or that are inferable from an inspection of the *Place of the Work* exercising the degree of care and skill described in paragraph 3.14.1."
- SC47.3 9.1.5 Add new paragraph 9.1.5 as follows:
- "9.1.5 With respect to any damage to which paragraphs 9.1.3 or 9.1.4 apply, the *Contractor* shall neither undertake to repair or replace any damage whatsoever to the work of other contractors, or to adjoining property, nor acknowledge that the same was caused or occasioned by the *Contractor*, without first consulting the *Owner* and receiving written instructions as to the course of action to be followed from either the *Owner* or the *Consultant*. Where, however, there is danger to life, the environment, or public safety,

the *Contractor* shall take such emergency action as it deems necessary to remove the danger."

SC48 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

SC48.1 9.2.5 Add a new subparagraph 9.2.5.5 as follows:

"5 in addition to the steps described in subparagraph 9.2.5.3, take any further steps it deems necessary to mitigate or stabilize any conditions resulting from encountering toxic or hazardous substances or materials."

SC48.2 9.2.6 Add the following to paragraph 9.2.6, after the word "responsible" in the second line:

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

SC48.3 9.2.7 Add "and the *Consultant*" after the word "*Contractor*" in subparagraph 9.2.7.4

SC48.4 9.2.8 Add the following to paragraph 9.2.8, after the word "responsible" in the second line:

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

SC48.5 9.2.10 Add new paragraph 9.2.10 as follows:

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

SC49 GC 9.4 CONSTRUCTION SAFETY

SC49.1 9.4.1 Delete paragraph 9.4.1 in its entirety and replace with the following:

"9.4.1 The *Contractor* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations, and practices required by the *OHSA*, including, but not limited to those of the "constructor", and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the *Work*. Without limiting the foregoing, the *Contractor* shall be solely responsible for construction safety in respect of its *Consultants*, other *Consultants*, *Subcontractors* and *Suppliers*, the *Owner's* own forces, and other contractors, subcontractors, and suppliers during the course of the *Project*."

SC49.2 9.4 Add new paragraphs 9.4.2 to 9.4.10 as follows:

"9.4.2 Prior to the commencement of the *Work*, the *Contractor* shall submit to the *Owner*:
.1 the evidence of workers' compensation compliance required by GC 10.4.1;
.2 copies of the *Contractor's* insurance policies having application to the *Project* or certificates of insurance, at the option of the *Owner*;
.3 documentation setting out the *Contractor's* in-house safety programs;

- .4 a copy of the "Notice of *Project*" filed with the Ministry of Labour;
- .5 copies of any documentation or notices to be filed or delivered to the authorities having jurisdiction for the regulation of occupational health and safety at the *Place of the Work*.

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

SC50 GC 9.5 MOULD

SC 50.1 9.5.3 Add “and the *Consultant*” after “*Contractor*” in subparagraph 9.5.3.4

PART 10 GOVERNING REGULATIONS

SC51 GC 10.1 TAXES AND DUTIES

SC51.1 10.1.2 Amend paragraph 10.1.2 by adding the following sentence to the end of the paragraph:

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

SC51.2 10.1.3 Add new paragraph 10.1.3 as follows:

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

SC52 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

SC52.1 10.2.5 Amend paragraph 10.2.5 by adding the words “Subject to paragraph 3.4” at the beginning of the paragraph.
-and-

Add the following to the end of the second sentence:

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

SC52.2 10.2.6 Amend paragraph 10.2.6 by adding the following sentence to the end of the paragraph:

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

SC52.3 10.2.7 Amend paragraph 10.2.7 by inserting the words “which changes were not, or could not have reasonably been known to the *Owner* or to the *Contractor*, as applicable, at the time of bid closing and which changes did not arise as a result of a public emergency or other Force Majeure event” to the second line, after the words “authorities having jurisdiction”.

SC52.4 10.2.8 Add new paragraph 10.2.8 as follows:

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

SC53 GC 10.4 WORKERS' COMPENSATION

SC53.1 10.4.1 Delete paragraph 10.4.1 and replace with the following:

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

PART 11 INSURANCE AND CONTRACT SECURITY

SC54 GC 11.1 INSURANCE

SC54.1 GC 11.1 Delete entirety of GC 11.1 and replace with the following:

"GC 11.1 INSURANCE

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

.1 General Liability Insurance

General liability insurance shall be in the name of the *Contractor*, with the *Owner* and the *Consultant* named as Additional insureds, with limits of not less than \$5,000,000.00 inclusive per occurrence for bodily injury, death, and damage to property, including loss of use thereof, for itself and each of its employees, *Subcontractors* and/or agents. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent replacement, provided that IBC Form 2100 shall contain the latest edition of the relevant CCDC endorsement form. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*. Where the *Contractor* maintains a single, blanket policy, the Addition of the *Owner* and the *Consultant* is limited to liability arising out of the *Project* and all operations necessary or incidental thereto. The policy shall be endorsed to provide the *Owner* with not less than 30 days' notice, in writing, in advance of any cancellation and of change or amendment restricting coverage.

.2 Automobile Liability Insurance

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

.3 Aircraft and Watercraft Liability Insurance

Where determined necessary by the *Contractor*, acting reasonably, aircraft and watercraft liability insurance will be obtained in accordance with the provisions of paragraph 11.1.3. Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft if used directly or indirectly in the performance of the *Work*, including use of Additional premises, shall be subject to limits of not less than \$2,000,000.00 inclusive per occurrence for bodily injury, death and damage to property, including loss of use thereof and limits of not less than \$2,000,000.00 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 30 days' notice, in writing, in advance of cancellation, change or amendment restricting coverage.

.4 Property and Boiler and Machinery Insurance

- (1) Builder's Risk property insurance shall be in the name of the *Contractor* with the *Owner* and the *Consultant* named as Additional insureds. The policy shall insure against all risks of direct physical loss or damage to the property insured which shall include all property included in the *Work*, whether owned by the *Contractor* or the owner or owned by others, so long as the property forms part of the *Work*. The property insured also includes all materials and supplies necessary to complete the work, whether installed in the work temporarily or permanently, in storage on the project site, or in transit to the project site, as well as temporary buildings, scaffolding, falsework forms, hoardings, excavation, site preparation and similar work. The insurance shall be for not less than the sum of the amount of the contract price and the full value of products that are specified to be provided by the owner for incorporation into the work, if applicable, with the deductible of \$10,000.00 payable by the contractor. The insurance shall include the foregoing and, otherwise, shall not be less than the insurance required by IBC Form 4042 or its equivalent replacement provided that the IBC Form 4042 shall include the latest Addition of the relevant CCDC endorsement form. The coverage shall be based on a completed value form and shall be maintained continuously until ten (10) days after the date of the final certificate of payment.
- (2) Boiler and machinery insurance shall be in the name of the *Contractor*, with the *Owner* and the *Consultant* named as Additional insureds, for not less than the replacement value of the boilers, pressure vessels and other insurable objects forming part of the *Work*. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 10 days after the date of the final certificate for payment.
- (3) The policies shall allow for partial or total use or occupancy of the *Work*.
- (4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Contractor* shall *Act* on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of the *Contract Time*, relative to the extent of the loss or damage, as determined by the *Owner*, in its sole discretion.
- (5) The *Contractor* shall be entitled to receive from the *Owner*, in Addition to the amount due under the *Contract*, the amount at which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds and as provided in GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 – PROGRESS PAYMENT. In

Addition, the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*.

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

.5 Contractors' Equipment Insurance

"All risks" contractors' equipment insurance covering construction machinery and equipment used by the *Contractor* for the performance of the *Work*, excluding boiler insurance, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 30 days' notice, in writing, in advance of cancellation, change or amendment restricting coverage. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance of his equipment, the *Owner* agrees to waive the equipment insurance requirement."

- 11.1.2 The *Contractor* shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the *Contractor's* responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY.
- 11.1.3 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required to waive the course of construction insurance requirement.
- 11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and provide evidence of same to the *Contractor*. The *Contractor* shall pay the costs thereof to the *Owner* on demand, or the *Owner* may deduct the amount that is due or may become due to the *Contractor*.
- 11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*."

SC55 GC 11.2 CONTRACT SECURITY

SC55.1 11.2.1 Delete paragraph 11.2.1 and replace it with the following:

"11.2.1 If required by the *Contract Documents*, the *Contractor* shall, prior to the execution of the *Contract* and within 7 calendar days of receiving *Notice in Writing* to do so, furnish a performance bond and labour and material payment bond which meets the requirements under paragraph 11.2.2."

SC55.2 11.2.2 Delete paragraph 11.2.2 and replace it with the following:

"11.2.2 The performance bond and labour and material payment bond, if required, shall:

.1 be issued by a duly licensed surety company, which has been approved by the *Owner* and is permitted under the *Construction Act*,

.2 be issued by an insurer licensed under the *Insurance Act* (Ontario) and authorized to transact a business of suretyship in the Province of Ontario;

.3 shall be in the form prescribed by the *Act*;

.4 have a coverage limit of at least 50 per cent of the *Contract Price*, or such other percentage of the *Contract Price* as stated in the *Contract Documents*;

.5 extends protection to *Subcontractors*, *Suppliers*, and any other persons supplying labour or materials to the *Project*; and

.4 shall be maintained in good standing until the fulfillment of the *Contract*, including all warranty and maintenance periods set out in the *Contract Documents*."

SC55.3 11.2.3 Add new paragraph 11.2.3 as follows:

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

PART 9 PROTECTION OF PERSONS AND PROPERTY

SC56 GC 12.1 INDEMNIFICATION

SC56.1 Delete the contents of GC 12.1 – INDEMNIFICATION in its entirety and substitute as follows:

"12.1.1 The *Contractor* shall indemnify and hold harmless the *Owner*, its parent, subsidiaries and affiliates, their respective partners, trustees, officers, directors, agents and employees and the *Consultant* from and against any and all claims, liabilities, expenses, demands, losses, damages, actions, costs, suits, or proceedings (hereinafter called "claims"), whether in respect of claims suffered by the *Owner* or in respect of claims by third parties, that directly or indirectly arise out of, or are attributable to, the acts or omissions of the *Contractor*, its employees, agents, *Subcontractors*, *Suppliers* or any other persons for whom it is in law responsible (including, without limitation, claims that directly or indirectly arise out of, or are attributable to, loss of use or damage to the *Work*, the *Owner's* property or equipment, the *Contractor's* property or equipment or equipment or property adjacent to the *Place of the Work* or death or injury to the *Contractor's* personnel).

12.1.2 The provisions of GC 12.1 - INDEMNIFICATION shall survive the termination of the *Contract*, howsoever caused and no payment or partial payment, no issuance of a final certificate of payment and no occupancy in whole or in part of the *Work* shall constitute a waiver or release of any of the provisions of GC 12.1."

SC57 GC 12.2 WAIVER OF CLAIMS

SC57.1 12.2.1 In paragraph 12.2.1 in the fourth line after the word "limitation", add the words "claims for delay pursuant to GC 6.5 DELAYS"

-and-

add the words "(collectively "Claims")" after "*Substantial Performance of the Work*" in the sixth line.

SC57.2 12.2.1 In subparagraph 12.2.1.1 change the word "claims" to "Claims" and change the word "claim" to "Claim".

SC57.3 12.2.1 In subparagraph 12.2.1.2 change the word "claims" to "Claims".

SC57.4 12.2.1 Delete subparagraph 12.2.1.3 in its entirety.

SC57.5	12.2.1	In paragraph 12.2.1.4 <u>change</u> the word “claims” to “Claims”.
SC57.6	12.2.2	In paragraph 12.2.2 <u>delete</u> the words “in paragraphs 12.2.1.2 and 12.2.1.3” and <u>replace</u> them with “in paragraph 12.2.1.2” -and- <u>change</u> the word “claims” to “Claims” in both instances and <u>change</u> the word “claim” to “Claim”.
SC57.7	12.2.3	<u>Delete</u> paragraph 12.2.3 in its entirety.
SC57.8	12.2.4	<u>Delete</u> paragraph 12.2.4 in its entirety.
SC57.9	12.2.5	<u>Delete</u> paragraph 12.2.5 in its entirety.
SC57.10	12.2.6	In paragraph 12.2.6 <u>change</u> the word “claim” to “Claim” in all instances in the paragraph.
SC57.11	12.2.7	In paragraph 12.2.7 <u>change</u> “The party” to “The <i>Contractor</i> ” -and- <u>change</u> the word “claim” to “Claim” in all instances in the paragraph.
SC57.12	12.2.8	In paragraph 12.2.8 <u>delete</u> the words “under paragraphs 12.2.1 or 12.2.3” and <u>replace</u> them with “under paragraph 12.2.1” -and- <u>change</u> both instances of the words “the party” to “the <i>Contractor</i> ”. <u>Change</u> the word “claim” to “Claim” in all instances in the paragraph.
SC57.13	12.2.9	<u>Delete</u> paragraph 12.2.9 in its entirety.
SC57.14	12.2.10	<u>Delete</u> paragraph 12.2.10 in its entirety.
SC58	GC 12.3	WARRANTY
SC58.1	12.3.2	<u>Delete</u> from the first line of paragraph 12.3.2 the word, “The” and <u>replace</u> with the words “Subject to paragraph 3.4.1, the...”
SC58.2	12.3	<u>Add</u> new paragraphs 12.3.7 to 12.3.11 inclusive as follows: “12.3.7 The <i>Contractor</i> shall provide fully and properly completed and signed copies of all warranties and guarantees required by the <i>Contract Documents</i> , containing: .1 the proper name of the <i>Owner</i> ; .2 the proper name and address of the <i>Project</i> ; .3 the date the warranty commences, which shall be at the “date of Substantial Performance of the <i>Work</i> ” unless otherwise agreed upon by the <i>Consultant</i> in writing. .4 a clear definition of what is being warranted and/or guaranteed as required by the <i>Contract Documents</i> ; and .5 the signature and seal (if required by the governing law of the <i>Contract</i>) of the company issuing the warranty, countersigned by the <i>Contractor</i> . 12.3.8 Should any <i>Work</i> be repaired or replaced during the time period for which it is covered by the specified warranty, a new warranty shall be provided under the same conditions and for the same period as specified herein before. The new warranty shall commence at the completion of the repair or replacement. 12.3.9 The <i>Contractor</i> shall ensure that its <i>Subcontractors</i> are bound to the requirements of GC 12.3 – WARRANTY for the <i>Subcontractor’s</i> portion of the <i>Work</i> .”

- 12.3.10 The *Contractor* shall ensure that all warranties, guarantees or other obligations for *Work*, services or *Products* performed or supplied by any *Subcontractor*, *Supplier* or other person in connection with the *Work* are obtained and available for the direct benefit of the *Owner*. In the alternative, the *Contractor* shall assign to the *Owner* all warranties, guarantees or other obligations for *Work*, services or *Products* performed or supplied by any *Subcontractor*, *Supplier* or other person in connection with the *Work* and such assignment shall be with the consent of the assigning party, where required by law, or by the terms of that party's contract. Such assignment shall be in addition to, and shall in no way limit, the warranty rights of the *Owner* under the *Contract Documents*.
- 12.3.11 The *Contractor* shall commence or correct any deficiency within 2 *Working Days* after receiving a *Notice in Writing* from the *Owner* or the *Consultant*, and shall complete the *Work* as expeditiously as possible, except in the case where the deficiency prevents maintaining security or where basic systems essential to the ongoing business of the *Owner* and/or its tenants cannot be maintained operational as designed. In those circumstances all necessary corrections and/or installations of temporary replacements shall be carried out immediately as an emergency service. Should the *Contractor* fail to provide this emergency service within 8 hours of a request being made during the normal business hours of the *Contractor*, the *Owner* is authorized, notwithstanding GC 3.1, to carry out all necessary repairs or replacements at the *Contractor's* expense."

***NEW* PART 13 OTHER PROVISIONS**

SC59 GC 13.1 OWNERSHIP OF MATERIALS

SC59.1 13.1 Add new GC 13.1 – OWNERSHIP OF MATERIALS as follows:

"GC 13.1 OWNERSHIP OF MATERIALS

- 13.1.1 Unless otherwise specified, all materials existing at the *Place of the Work* at the time of execution of the *Contract* shall remain the property of the *Owner*. All *Work* and *Products* delivered to the *Place of the Work* by the *Contractor* shall be the property of the *Owner*. The *Contractor* shall remove all surplus or rejected materials as its property when notified in writing to do so by the *Consultant*."

SC60 GC 13.2 CONSTRUCTION LIENS

SC60.1 13.2 Add new GC 13.2 – CONSTRUCTION LIENS as follows:

"GC 13.2 CONSTRUCTION LIENS

- 13.2.1 Notwithstanding any other provision in the *Contract*, the *Consultant* shall not be obligated to issue a certificate, and the *Owner* shall not be obligated to make payment, subject to the *Owner's* requirement to issue a *Notice of Non-Payment* (Form 1.1) to the *Contractor*, if at the time such certificate or payment was otherwise due:
- .1 a claim for lien has been registered against the *Project* lands by a *Subcontractor* or a *Supplier* that has not been vacated or discharged by the *Contractor* in accordance with the requirements of this *Contract*, or
- .2 if the *Owner* or a mortgagee of the *Project* lands has received a written notice of a lien that has not been resolved by the *Contractor* through the posting of security or otherwise.
- 13.2.2 In the event a construction lien arising from the performance of the *Work* is registered or preserved against the *Project* lands by a *Subcontractor* or a *Supplier*, or a written notice of a lien is given or a construction lien action is commenced against the *Owner* by a *Subcontractor* or a *Supplier*, then the *Contractor* shall, at its own expense:

- .1 within 10 calendar days of registration of the construction lien, vacate or discharge the lien from title to the premises (i.e. the *Place of the Work*). If the lien is merely vacated, the *Contractor* shall, if requested, undertake the *Owner's* defence of any subsequent action commenced in respect of the lien, at the *Contractor's* sole expense;
- .2 within 10 calendar days of receiving notice of a written notice of a lien, post security with the Ontario Superior Court of Justice so that the written notice of a lien no longer binds the parties upon whom it was served; and
- .3 satisfy all judgments and pay all costs arising from such construction liens and actions and fully indemnify the *Owner* against all costs and expenses arising from same, including legal costs on a full indemnity basis.

13.2.3 In the event that the *Contractor* fails or refuses to comply with its obligations pursuant to paragraph 13.2.2, the *Owner* shall, at its option, be entitled to take all steps necessary to address any such construction liens including, without limitation and in addition to the *Owner's* rights under paragraph 13.2.4, the posting of security with the Ontario Superior Court of Justice to vacate the claim for lien from title to the *Project* lands, and in so doing will be entitled to a full indemnity from the *Contractor* for all legal fees, security, disbursements and other costs incurred and will be entitled to deduct same from amounts otherwise owing to the *Contractor*.

13.2.4 In the event that any *Subcontractor* or *Supplier* registers any claim for lien with respect to all or part of the *Place of Work*, the *Owner* shall have the right to withhold, in addition to the statutory holdback, the full amount of said claim for lien plus either: (a) \$250,000 if the claim for lien is in excess of \$1,000,000 or (b) 25% of the value of the claim for lien and to bring a motion to vacate the registration of said claim for lien and any associated certificate of action in respect of that lien, in accordance with Section 44 of the *Act*, by paying into court as security the amount withheld.

13.2.5 Nothing in this GC 13.2 serves to preclude the *Contractor* from preserving and perfecting its lien in the event of non-payment by the *Owner*."

SC61 GC13.3 CONFIDENTIALITY

SC61.1 13.3 Add New GC13.3, CONFIDENTIALITY as following:

"GC 13.3 CONFIDENTIALITY

13.3.1 Each of the parties will take reasonable precautions to protect the *Confidential Information* of the other, and will not disclose the *Confidential Information* of the other to any third party except for employees, *Consultant*, *Suppliers* and *Subcontractors* with a need to know but only to the extent necessary for such obligations to be fulfilled. Before granting access to any *Confidential Information* of the other to any third party other than an employee, a party will undertake to have such third party sign an agreement causing them to be bound by terms substantially the same as those in this present paragraph.

13.3.2 At either party's request, the other will immediately return to that party any *Confidential Information* of that party then in its possession or under its control, except for information necessary to perform duties under the *Contract*. In addition, after the earlier of the completion of the *Contractor's* obligations under the *Contract* or the termination of the *Contract*, the *Contractor* will return or, with the consent of the *Owner*, destroy all of the *Owner's Confidential Information* provided to it or its personnel, affiliates, employees, agents, *Consultant*, *Subcontractors*, or *Suppliers*, as promptly as practicable (but in any event within ten (10) days), except for business records required by law to be retained by the *Contractor*. If the *Owner* consents to destruction of *Confidential Information*, then upon request of the *Owner* the *Contractor* shall deliver an affidavit signed by an officer of the Design-Builder attesting to the destruction of the *Confidential Information*.

- 13.3.3 If any unauthorized disclosure of, loss of, or inability to account for, *Confidential Information* of a party occurs while it is in the possession of the other, the other will notify the party immediately.
- 13.3.4 If any *Confidential Information* contains information received under confidence from any third party, the party receiving that information will on request enter into any non-disclosure agreement that third party may reasonably require that creates similar obligations of confidentiality as those in the *Contract*.
- 13.3.5 Both during or following the term of the *Contract*, the *Contractor* shall maintain the confidentiality and security of all *Confidential Information* and Personal Information, and that it shall not directly or indirectly disclose, destroy, exploit, or use any *Confidential Information* or personal information, except where required by law and having first obtained the written consent of the *Owner*. The *Contractor* acknowledges that it will comply with all requirements of the Personal Information Protection and Electronic Documents Act, S.C. 2000, c. 5.
- 13.3.6 The *Contractor* acknowledges that the *Owner* is bound by the provisions of the Municipal Freedom of Information and Protection of Privacy Act (Ontario) ("MFIPPA"). The *Contractor* further acknowledges that the *Owner* may be required to disclose any or all of the *Confidential Information* and personal information in the event that it is compelled to do so by law, through a request under MFIPPA, or by the rules of any applicable regulatory authority, and in such event, the *Owner* will promptly notify the *Contractor* so that the *Contractor* may take such action as it deems appropriate."

**APPENDIX 1
to the Supplementary Conditions**

Project-specific requirements for a “Proper Invoice”

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

- .1 the written bill or request for payment must be in writing;
- .2 the *Contractor's* name and current address;
- .3 the *Contractor's* HST registration number;
- .4 the date the application for payment was prepared by the *Contractor*;
- .5 the period of time in which the services or materials were supplied to the *Owner*;
- .6 the purchase order number provided by the *Owner*;
- .7 reference to the provisions of the *Contract* under which payment is being sought (e.g. GC 5.3 – PROGRESS PAYMENTS for progress payments, GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK, GC 5.7 – FINAL PAYMENT for final payment, etc.);
- .8 a description, including quantities where appropriate, of the services or materials, or a portion thereof, that were supplied and form the basis of the *Contractor's* request for payment;
- .9 the amount the *Contractor* is requesting to be paid by the *Owner*, set out in a statement based on the schedule of values approved under GC 5.2.5, separating out any statutory or other holdbacks, set-offs and HST;
- .10 a sworn Statutory Declaration in the form CCDC 9A-2018, only for second and subsequent progress payments;
- .11 a current Workplace Safety Insurance Board clearance certificate;
- .12 a pre-approved schedule of values, supplied by the *Contractor*, for Divisions 1 through 14 of the *Specifications* (or equivalent Construction *Specifications* Institute Masterformat) of the *Work*, aggregating the total amount of the *Contract Price*, including all supporting invoicing;
- .13 a separate pre-approved schedule of values, supplied by each *Subcontractor*, for each of Division 15, 16, and 17 of the *Specifications* (or equivalent Construction *Specifications* Institute Masterformat) of the *Work*, aggregating the total amount of the *Contract Price*, including all supporting invoicing;
- .14 invoices and other supporting documentation for all claims against the cash allowance;
- .15 a current, acceptable, and up to date *Construction Schedule Update*;
- .16 if requested by the *Owner*, a current and valid certificate(s) of insurance as required under GC 11.1 – INSURANCE;
- .17 the name, title, telephone number and mailing address of the person at the place of business of the *Contractor* to whom payment is to be directed;
- .18 a current, up to date, and approved Shop Drawing log;
- .19 in the case of the *Contractor's* application for final payment, in addition to the foregoing requirements (as applicable);

- (a) any documents or materials not yet delivered pursuant to paragraph 5.4.5, together with complete and final as-built drawings;
- (b) the *Contractor's* written request for release of the deficiency holdback, including a statement that no written notices of lien have been received by it;
- (c) the *Contractor's* written certification that there are no outstanding claims, pending claims or future claims from the *Contractor* or their *Subcontractors* or *Suppliers*; and
- (d) sufficient evidence of the *Contractor's* compliance with GC 3.13.3.

END OF AMENDMENTS TO CCDC 2 - 2008

PART 1 - GENERAL

1.1 SECTION <u>INCLUDES</u>	.1 Title and description of Work.
	.2 Alterations to existing.
	.3 Existing services.
	.4 Contract method.
	.5 Work by others.
	.6 Work sequence.
	.7 Contractor use of premises.
	.8 Partial Owner occupancy.
	.9 Owner furnished items.
1.2 WORK COVERED BY <u>CONTRACT DOCUMENTS</u>	.1 Work under this Contract covers the furnishing of all labour, materials, and equipment required for the Work described in the drawings and specifications prepared by Colbourne & Kembel, Architects Inc.
1.3 <u>CODES</u>	.1 Perform Work in accordance with the latest editions of the Ontario Building Code (OBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
	.2 Meet or exceed requirements of: .1 Contract documents, .2 Specified standards, codes and referenced documents.
1.4 <u>SPECIFICATION GRAMMAR</u>	.1 Specifications are written in the imperative mood, in an abbreviated form.

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| 1.4 SPECIFICATION
GRAMMAR
<u>(Cont'd)</u> | .2 | The imperative language of all technical sections is directed to the Contractor:
.1 This form of statement requires the Contractor or one of their engaged Subcontractors to perform such action or work.
.2 Perform all requirements whether stated imperatively or otherwise. |
| 1.5 ALTERATIONS,
ADDITIONS OR
REPAIRS TO EXISTING
<u>BUILDING</u> | .1 | Execute work with least possible interference or disturbance to building operations occupants, and normal use of premises. Arrange with Owner to facilitate execution of work. |
| | .2 | Use only entrances and corridor existing in building for moving workers and material.
.1 Protect walls and floors to approval of owner prior to use.
.2 Accept liability for damage, safety of equipment and overloading of existing equipment. |
| 1.6 EXISTING
<u>SERVICES</u> | .1 | Notify, Consultant, Owner, and utility companies of intended interruption of services and obtain required permission. |
| | .2 | Where Work involves breaking into or connecting to existing services, carry out work at times as directed by governing authorities with minimum disturbance to tenant operations. |
| | .3 | Establish location and extent of service lines in area of work before starting Work. Notify Consultant of findings. |
| | .4 | Provide temporary services when directed by Consultant to maintain critical building and tenant systems. |
| | .5 | Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic. |
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| 1.6 EXISTING SERVICES
(Cont'd) | .6 | Where unknown services are encountered, immediately advise Consultant and confirm findings in writing. |
| | .7 | Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction. |
| | .8 | Record locations of maintained, re-routed and abandoned service lines. |
| | .9 | Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures |
| 1.7 CONTRACT METHOD | .1 | Construct Work under single, stipulated price contract. The Canadian Standard Construction Document CCDC 2, 2008, and the supplementary conditions are part of the Contract Documents. |
| | .2 | The specification of all trades shall be carefully read by the Contractor so that he may make himself acquainted with the extent and nature of the work of other trades. |
| 1.8 WORK SEQUENCE | .1 | Construct Work in stages to accommodate Owner's continued use of premises during construction. |
| | .2 | Coordinate Progress Schedule and coordinate with Owner Occupancy during construction. |
| | .3 | Maintain fire access/control. |
| 1.9 CONTRACTOR USE OF PREMISES | .1 | For the period of July 4, 2022 to August 19, 2022, the Contractor will have exclusive use of the areas to be renovated. |
| | .2 | The Contractor will be provided with a key and alarm code to the building so that they may have access at any time. |
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1.9 CONTRACTOR USE OF PREMISES (Cont'd)	.3	Co-ordinate use of premises under direction of Owner.
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	.4	Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
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1.10 OWNER OCCUPANCY	.1	Owner will occupy premises for the period prior to July 4, 2022 and after August 19, 2022 for execution of normal operations.
	.2	Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage throughout the construction period.

1.11 DOCUMENTS REQUIRED	.1	Maintain at job site, one copy each document as follows:
	.1	Contract Drawings.
	.2	Specifications.
	.3	Addenda.
	.4	Reviewed Shop Drawings.
	.5	List of Outstanding Shop Drawings.
	.6	Change Orders.
	.7	Other Modifications to Contract.
	.8	Field Test Reports.
	.9	Copy of Approved Work Schedule.
	.10	Health and Safety Plan and Other Safety Related Documents.
	.11	Other documents as specified.

1.12 PROJECT MEETINGS	.1	Hold construction project meeting bi-weekly at site office.
	.2	Contractor will assume responsibility for recording and distributing minutes to all interested parties within 7 days of meeting.

PART 2 - PRODUCTS

2.1 NOT USED	.1	Not used.
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PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

PART 1 - GENERAL

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| 1.1 Section Includes | .1 | Schedule, form, content. |
| | .2 | Critical path scheduling. |
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| 1.2 Schedules Required | .1 | Contractor shall submit their Construction Schedule for review within seven days after award of contract utilizing the critical path method. This schedule shall be updated monthly with both hard copy and electronic copy forwarded to the Consultant. Monthly updates must include actual percentages complete. The Construction Schedule will be shown as a line item on the Contractor's Cost Breakdown. Failure to provide monthly updates may result in the contractor's request for payment being returned. |
| | .2 | The CPM Schedule shall include complete sequence of construction activities. |
| | .3 | Include dates for commencement and completion of each major element of construction. |
| | .4 | Show projected percentage of completion of each item as of first day of month. |
| | .5 | Indicate progress of each activity to date of submission schedule. |
| | .6 | Show changes occurring since previous submission of schedule: <ul style="list-style-type: none">.1 Major changes in scope..2 Activities modified since previous submission..3 Revised project icons of progress and completion..4 Other identifiable changes. |
| | .7 | Provide a narrative report to define: <ul style="list-style-type: none">.1 Problem areas, anticipated delays, and impact on schedule..2 Corrective action recommended and its effect. |
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PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

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| 1.1 Section Includes | .1 | Shop drawings and product data. |
| | .2 | Samples. |
| | .3 | Certificates and transcripts. |
| 1.2 Administrative | .1 | Submit electronically, to Consultant within 14 days from award submittals listed for review. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed. |
| | .2 | Work affected by submittal shall not proceed until review is complete. |
| | .3 | Present shop drawings, product data, samples and mock-ups in SI Metric units. |
| | .4 | Where items or information is not produced in SI Metric units converted values are acceptable. |
| | .5 | Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected. |
| | .6 | Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations. |
| | .7 | Verify field measurements and affected adjacent Work are coordinated. |

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| <u>1.2 Administrative
(Cont'd)</u> | .8 | Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals. |
| | .9 | Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant. |
| | .10 | Keep one reviewed copy of each submission on site. |
| <u>1.3 Shop Drawings
and Product Data</u> | .1 | The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work. |
| | .2 | Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications. |
| | .3 | Allow 10 working days for Consultant's review of each submission. |
| | .4 | Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work. |
| | .5 | Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested. |
| | .6 | Accompany submissions with transmittal letter, containing:
.1 Date. |
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- 1.3 Shop Drawings and Product Data
(Cont'd)
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- .6 (Cont'd)
- .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .7 Submissions shall include:
- .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .8 After Consultant's review, distribute copies.
- .9 Submit electronic copies of shop drawings for each requirement requested in specification Sections.
- .10 Delete information not applicable to project.
- .11 Supplement standard information to provide details applicable to project.
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<u>1.3 Shop Drawings and Product Data (Cont'd)</u>	.12	If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
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PART 2 - PRODUCTS

<u>2.1 Not Used</u>	.1	Not Used.
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PART 3 - EXECUTION

<u>3.1 Not Used</u>	.1	Not Used.
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PART 1 - GENERAL

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| <u>1.1 Reporting Fires</u> | .1 | Know location of nearest fire alarm box and telephone, including emergency phone number. |
| | .2 | Report immediately all fire incidents to Fire Department as follows: <ul style="list-style-type: none">.1 activate nearest fire alarm box; or.2 telephone 911 from local phone; or.3 from cellular phone dial 911 and tell 911 operator the location of the fire |
| | .3 | Person calling in alarm will remain on site to direct Fire Department to scene of fire. |
| | .4 | When reporting fire by telephone, give location of fire, name or number of building and be prepared to verify the location. |
| <u>1.2 Interior and Exterior Fire Protection and Alarm Systems</u> | .1 | Fire protection and alarm system will not be: <ul style="list-style-type: none">.1 obstructed;.2 shut-off; and.3 left inactive at end of working day without pre-arrangement with with owner. |
| | .2 | Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Fire Chief. |
| <u>1.3 Fire Extinguishers</u> | .1 | Supply fire extinguishers, as necessary, to protect work in progress and contractor's physical plant on site. |
| <u>1.4 Blockage of Roadways</u> | .1 | Advise Fire Chief of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by Fire Chief, erecting of barricades and digging of trenches. |
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| 1.5 Smoking
<u>Precautions</u> | .1 | No smoking on school property at any time as per the Smoke Free Ontario Act. |
| 1.6 Rubbish and
<u>Waste Materials</u> | .1 | Rubbish and waste materials are to be kept to a minimum. |
| | .2 | Burning of rubbish is prohibited. |
| | .3 | Removal:
.1 Remove all rubbish from work site at end of work day or shift or as directed. |
| | .4 | Storage:
.1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
.2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles. |
| 1.7 Hazardous
<u>Substances</u> | .1 | Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, will be in accordance with National Fire Code of Canada. |
| | .2 | Obtain a "Hot Work" permit for work involving welding, burning or use of blow torches and salamanders, in buildings or facilities. |
| | .3 | When Work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of the Fire Chief. Contractors are responsible for providing fire watch service for work on a scale established and in conjunction with Fire Chief at pre-work conference. |
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| 1.7 Hazardous Substances
(Cont'd) | .4 | Where flammable liquids, such as lacquers or urethanes are to be used, proper ventilation will be assured and all sources of ignition are to be eliminated. Fire Chief is to be informed prior to and at cessation of such work. |
| | .5 | Refer also to Appendix A Designated Substances Report. |
| 1.8 Questions and/or Clarification | .1 | Direct any questions or clarification on Fire Safety in addition to above requirements to Fire Chief. |
| 1.9 Fire Inspection | .1 | Site inspections by Fire Chief will be coordinated through Project Manager. |
| | .2 | Allow Fire Chief unrestricted access to work site. |
| | .3 | Co-operate with Fire Chief during routine fire safety inspection of work site. |
| | .4 | Immediately remedy all unsafe fire situations observed by Fire Chief. |
| 1.10 Hot Work | .1 | A Hot Work Permit is required for any operations involving open flames or work and equipment producing heat or sparks. This work includes but is not necessarily limited brazing, cutting, grinding, soldering, torching and cadwelding. |
| | .2 | Fire watches are required during all hot work as described in Para 1.10.1 of this section. It is the Contractor's responsibility to provide all labour material and equipment to include personnel for the fire watch. Fire watch to continue for a minimum of 30 minutes after completion of work, including end of work day, coffee breaks and lunch breaks. |
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<u>1.10 Hot Work</u> <u>(Cont'd)</u>	.3	Fully comply with all required precautions indicated on the hot work permit checklist. Provide owner with an electronic copy of each permit for Hot Work. Leave Hard Copy of the Original on Site with the Custodian.
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PART 2 - PRODUCTS

<u>2.1 Not Used</u>	.1	Not Used.
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PART 3 - EXECUTION

<u>3.1 Not Used</u>	.1	Not Used.
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PART 1 - GENERAL

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| <u>1.1 Fires</u> | .1 | Fires and burning of rubbish on site not permitted. |
| <u>1.2 Disposal of Wastes</u> | .1 | Do not bury rubbish and waste materials on site. |
| | .2 | Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers. |

PART 2 - PRODUCTS

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| <u>2.1 Not Used</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 Not Used</u> | .1 | Not Used. |
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PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | Inspection and testing, administrative and enforcement requirements. |
| | .2 | Equipment and system adjust and balance. |
| <u>1.2 Inspection</u> | .1 | Allow Consultant access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress. |
| | .2 | Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Consultant instructions, or law of Place of Work. |
| | .3 | If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work. |
| | .4 | Consultant may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Owner shall pay cost of examination and replacement. |
| <u>1.3 Independent Inspection Agencies</u> | .1 | Independent Inspection/Testing Agencies may be engaged by Owner for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Owner. |
| | .2 | Provide equipment required for executing inspection and testing by appointed agencies. |
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| <u>1.3 Independent Inspection Agencies (Cont'd)</u> | .3 | Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents. |
| | .4 | If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant at no cost. Pay costs for retesting and re inspection. |
| <u>1.4 Access to Work</u> | .1 | Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants. |
| | .2 | Co-operate to provide reasonable facilities for such access. |
| <u>1.5 Procedures</u> | .1 | Notify appropriate agency and Consultant in advance of requirement for tests, in order that attendance arrangements can be made. |
| | .2 | Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work. |
| | .3 | Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples. |
| <u>1.6 Rejected Work</u> | .1 | Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents. |
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| <u>1.6 Rejected Work
(Cont'd)</u> | .2 | Make good other Contractor's work damaged by such removals or replacements promptly. |
| | .3 | If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant. |

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| <u>1.7 Reports</u> | .1 | Submit electronic copy of inspection and test reports. |
| | .2 | Provide copies to Subcontractor of work being inspected or tested or manufacturer or fabricator of material being inspected or tested. |

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| <u>1.8 Equipment and
Systems</u> | .1 | Submit adjustment and balancing reports for mechanical, electrical and building equipment systems. |
| | .2 | Refer to Section 01 78 00 for definitive requirements. |

PART 2 - PRODUCTS

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| <u>2.1 Not Used</u> | .1 | Not Used |
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PART 3 - EXECUTION

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| <u>3.1 Not Used</u> | .1 | Not Used |
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PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | Temporary utilities. |
| <u>1.2 Installation and Removal</u> | .1 | Provide temporary utilities controls in order to execute work expeditiously. |
| | .2 | Remove from site all such work after use. |
| <u>1.3 Water Supply</u> | .1 | Owner will provide continuous supply of potable water for construction use. |
| | .2 | Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal. |
| <u>1.4 Temporary Heating and Ventilation</u> | .1 | Be responsible for damage to Work due to failure in providing adequate ventilation and protection during construction. |
| | .2 | Contractor to provide temporary heat and electrical if required. |
| <u>1.5 Temporary Power and Light</u> | .1 | Owner will pay for temporary power during construction for temporary lighting and operating of power tools. |
| | .2 | Arrange for connection and pay all costs for installation, maintenance and removal. |
| | .3 | Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx. |
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<u>1.6 Temporary Communication Facilities</u>	.1	Provide and pay for temporary telephone, fax and data lines necessary for own use.
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<u>1.7 Fire Protection</u>	.1	Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
	.2	Burning rubbish and construction waste materials is not permitted on site.

PART 2 - PRODUCTS

<u>2.1 Not Used</u>	.1	Not Used.
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PART 3 - EXECUTION

<u>3.1 Not Used</u>	.1	Not Used.
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PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | Construction aids. |
| | .2 | Office and sheds. |
| | .3 | Parking. |
| | .4 | Project identification. |
| <u>1.2 Installation and Removal</u> | .1 | Provide construction facilities in order to execute work expeditiously. |
| | .2 | Remove from site all such work after use. |
| <u>1.3 Scaffolding</u> | .1 | Provide and maintain scaffolding, ramps and ladders. |
| <u>1.4 Hoisting</u> | .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. |
| <u>1.5 Site Storage/Loading</u> | .1 | Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products. |
| | .2 | Do not load or permit to load any part of Work with a weight or force that will endanger the Work. |
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1.6 Construction Parking

- .1 Parking will be permitted on site.
- .2 Provide and maintain adequate access to project site.
- .3 Use existing roads for access to project site. Make good damage resulting from Contractor's use of roads and site.

1.7 Offices

- .1 Provide Contractor's site office heated to 22°C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing lay down table.
- .2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors to provide their own offices as necessary.
- .4 Locate on site as directed by the owner.
- .5 Install on site within two (2) weeks of contract award. Remove from site at completion of construction contract.

1.8 Equipment, Tool and Materials Storage

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

1.9 Sanitary Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | Barriers. |
| | .2 | Environmental Controls. |
| | .3 | Fire Routes. |
| <u>1.2 Installation and Removal</u> | .1 | Provide temporary controls in order to execute Work expeditiously. |
| | .2 | Remove from site all such work after use. |
| <u>1.3 HOARDING</u> | .1 | Erect temporary site enclosures to contain designated construction areas using new 1.8 m high temporary portable fencing. Panels to have 42mm welded galvanized frames with non-climbable mesh. |
| <u>1.4 Guard Rails and Barricades</u> | .1 | Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors. |
| | .2 | Provide as required by governing authorities. |
| <u>1.5 Weather Enclosures</u> | .1 | Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs. |
| | .2 | Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat. |
| | .3 | Design enclosures to withstand wind pressure and snow loading. |
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| <u>1.6 Dust Tight Screens</u> | .1 | Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public. |
| | .2 | Maintain and relocate protection until such work is complete. |
| <u>1.7 Fire Routes</u> | .1 | Maintain access to property including overhead clearances for use by emergency response vehicles. |
| <u>1.8 Protection for Off-Site and Public Property</u> | .1 | Protect surrounding private and public property from damage during performance of Work. |
| | .2 | Be responsible for damage incurred. |
| <u>1.9 Protection of Building Finishes</u> | .1 | Provide necessary screens, covers, and hoardings. |
| | .2 | Be responsible for damage incurred due to lack of or improper protection. |

PART 2 - PRODUCTS

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| <u>2.1 Not Used</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 Not Used</u> | .1 | Not Used. |
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PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | Product quality, availability, storage, handling, protection, and transportation. |
| | .2 | Manufacturer's instructions. |
| | .3 | Quality of Work, coordination and fastenings. |
| | .4 | Existing facilities. |
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| <u>1.2 Quality</u> | .1 | Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (as per specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided. |
| | .2 | Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection. |
| | .3 | Should any dispute arise as to quality or fitness of products, decision rests strictly with Consultant based upon requirements of Contract Documents. |
| | .4 | Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building. |
| | .5 | Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms. |
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<u>1.2 Quality (Cont'd)</u>	.6	In specification sections where a specific manufacturer and/or product is specified as "an acceptable product is:" other manufacturers products meeting this standard, as determined by the Consultant, will be accepted as an alternative unless specified otherwise.
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<u>1.3 Availability</u>	.1	Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
	.2	In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

<u>1.4 Storage, Handling and Protection</u>	.1	Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
	.2	Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
	.3	Store products subject to damage from weather in weatherproof enclosures.
	.4	Store cementitious products clear of earth or concrete floors, and away from walls.
	.5	Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

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| 1.4 Storage,
Handling and
Protection
(Cont'd) | .6 | Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture. |
| | .7 | Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion. |
| | .8 | Remove and replace damaged products at own expense and to satisfaction of Consultant. |
| <u>1.5 Transportation</u> | .1 | Pay costs of transportation of products required in performance of Work. |
| <u>1.6 Manufacturer's Instructions</u> | .1 | Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers. |
| | .2 | Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action. |
| | .3 | Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time. |
| <u>1.7 Quality of Work</u> | .1 | Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results. |
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| <u>1.7 Quality of Work</u>
(Cont'd) | .2 | Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site, workers deemed incompetent or careless. |
| | .3 | Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final. |
| <u>1.8 Co-Ordination</u> | .1 | Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision. |
| | .2 | Be responsible for coordination and placement of openings, sleeves and accessories. |
| <u>1.9 Concealment</u> | .1 | In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise. |
| | .2 | Before installation, inform Consultant if there is interference. Install as directed by Consultant. |
| <u>1.10 Remedial Work</u> | .1 | Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required. |
| | .2 | Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work. |
| <u>1.11 Location of Fixtures</u> | .1 | Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate. |
| | .2 | Inform Consultant of conflicting installation. Install as directed. |
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| <u>1.12 Fastenings</u> | .1 | Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise. All fasteners shall be compatible with materials being used (eg. pressure treated wood). |
| | .2 | Prevent electrolytic action between dissimilar metals and materials. |
| | .3 | Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section. |
| | .4 | Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable. |
| | .5 | Keep exposed fastenings to a minimum, space evenly and install neatly. |
| | .6 | Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable. |
| <u>1.13 Fastenings - Equipment</u> | .1 | Use fastenings of standard commercial sizes and patterns with material and finish suitable for service. |
| | .2 | Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas. |
| | .3 | Bolts may not project more than one diameter beyond nuts. |
| | .4 | Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel. |
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| <u>1.14 Protection of Work in Progress</u> | .1 | Prevent overloading of any part of building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Consultant. |
| <u>1.15 Existing Utilities</u> | .1 | When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and pedestrian and vehicular traffic. |
| | .2 | Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service. |

PART 2 - PRODUCTS

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| <u>2.1 Not Used</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 Not Used</u> | .1 | Not Used. |
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PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .1 | Submit to Consultant and Owner copies of the following documents, including updates issued:
.1 Health and Safety Program submit, prior to commencement of work on the work site.
.2 Reports or directions issued by authorities having jurisdiction, immediately upon issuance from that authority.
.3 Accident or Incident Reports, within 24 hrs of occurrence. |
| | .2 | Submit other data, information and documentation upon request by the Consultant as stipulated elsewhere in this section. |
| <u>1.2 COMPLIANCE REQUIREMENTS</u> | .1 | Comply with the latest edition of the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act. |
| | .2 | Observe and enforce construction safety measures required by:
.1 Ontario Building Code (latest edition).
.2 Provincial Worker's Compensation Board.
.3 Municipal statutes and ordinances. |
| | .3 | In event of conflict between any provisions of above authorities the most stringent provision shall apply. |
| | .4 | Provide and maintain Worker's Compensation Board coverage for all employees for the duration of the contract. Prior to commencement of the work, at each Interim Progress Claim, and prior to final payment, provide to the Consultant a letter of Clearance from the Worker's Compensation Board indicating that the Contractor's account is in good standing. |
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1.2 COMPLIANCE
REQUIREMENTS
(Cont'd)

- .4 (Cont'd)
- .1 Should the Contractor be a sole proprietor, provide documented proof in a form acceptable to the Consultant, of an alternative means of personal coverage that meets or exceeds the requirements set out above for Worker's Compensation Board coverage.

1.3 RESPONSIBILITY

- .1 The Contractor is responsible for safety of persons and property on the work site and the general public circulating adjacent to work site operations to extent that they may be affected by conduct of work.
- .2 The Contractor is to enforce compliance by workers and other persons granted access to work site with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with the Contractor's Health and Safety Program.
- .3 Should an unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise the Consultant verbally and in writing of the hazard or condition.

1.4 SITE CONTROL
AND ACCESS

- .1 Control all work site access points and work site activities. Delineate and isolate the work site from adjacent and surrounding areas by use of appropriate means to maintain control of all work site access points.
- .2 Make provisions for granting permission to access onto work site to all persons who require access. Procedures for granting permission to access are to be in accordance with the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act and the Contractor's Health and Safety Program.

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| <u>1.4 SITE CONTROL
AND ACCESS
(Cont'd)</u> | .3 | Ensure persons granted access to the work site are in possession of and wear the minimum personal protective equipment (PPE) designated by the Contractor's Health and Safety Program. Ensure persons granted access to the work site are provided with, trained in the use of, and wear, appropriate PPE that are required above and beyond the designated minimums previously noted and as specifically related to the work site activity that they are involved in. Be responsible for the efficacy of the PPE that is provided above and beyond the designated minimums. |
| | .4 | Erect signage at access points and at other strategic locations around the work site clearly identifying the work site area(s) as being "off-limits" to non-authorized persons. Signage must be professionally made with well understood graphic symbols and is not to be used as advertising but for the specific use as related to site safety and key contact information.
.1 Information to be provided on the signage is as follows:
.1 Project Name/Description:
.2 Contractor Company Name:
.3 Project Superintendent's Name/Phone No.: |
| | .5 | Secure the work site at all times to protect against un-authorized access. |
| <u>1.5 FILING OF
NOTICE</u> | .1 | File Notice of Project and any other required Notices with the Provincial/Territorial Authorities prior to commencement of the work. Provide the Owner with a copy of the filed Notice(s) prior to commencement of the work. |
| <u>1.6 PERMITS</u> | .1 | Obtain permits, licenses and compliance certificates, such as ESA, Plumbing permit etc., at appropriate times and frequencies as required by the authorities having jurisdiction. |
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| <u>1.6 PERMITS
(Cont'd)</u> | .2 | Post all permits, licenses and compliance certificates on work site. |
| | .3 | Owner to provide building permit. |
| <u>1.7 ACCIDENT
REPORTING</u> | .1 | Investigate and report incidents and accidents as required Ontario Occupational Safety and Health Act, and the Regulations made pursuant to the Act. |
| | .2 | For the purpose of this contract immediately investigate and provide a report on incidents and accidents that involve:
.1 A resulting injury that may or may not require medical aid but involves lost time at work by the injured person(s).
.2 Exposure to toxic chemicals or substances.
.3 Property damage.
.4 Interruption to adjacent and/or integral infrastructure operations with potential loss implications. |
| | .3 | In the investigation and reporting of incidents and accidents, the Contractor is required to respond in a timely fashion to correct the action that was deemed to have caused the incident and/or accident and advise in writing on the action taken to prevent a re-occurrence of the incident and/or accident. |
| <u>1.8 RECORDS ON SITE</u> | .1 | Maintain on site a copy of the safety documentation as specified in this section and any other safety related reports and documents issued to or received from the authorities having jurisdiction. |

PART 1 - GENERAL

<u>1.1 SECTION INCLUDES</u>	.1	Requirements and limitations for cutting and patching the Work.
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<u>1.2 RELATED SECTIONS</u>	.1	Individual product Sections: cutting and patching incidental to work of section. Advance notification to other sections required.
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<u>1.3 SUBMITTALS</u>	.1	Submit written request in advance of cutting or alteration which affects: .1 Structural integrity of any element of Project. .2 Integrity of weather-exposed or moisture-resistant elements. .3 Efficiency, maintenance, or safety of any operational element. .4 Visual qualities of sight-exposed elements. .5 Work of Owner or separate contractor.
	.2	Include in request: .1 Identification of Project. .2 Location and description of affected Work. .3 Statement on necessity for cutting or alteration. .4 Description of proposed Work, and products to be used. .5 Alternatives to cutting and patching. .6 Effect on Work of Owner or separate contractor. .7 Written permission of affected separate contractor. .8 Date and time work will be executed.

<u>1.4 MATERIALS</u>	.1	Required for original installation.
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1.4 MATERIALS
(Cont'd)

- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00.

1.5 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.6 EXECUTION

- .1 All necessary cutting and patching of work for the Mechanical and Electrical or associated trades shall be done by the General Contractor. General Contractor is to coordinate and schedule related subtrades prior to pouring concrete, installing finishes to ensure that sub-trades routing, installation of services, finishes, etc. are in place prior to installing.
- .2 Execute cutting, fitting, and patching. required to make work fit properly together and as necessary for the installation of new and existing materials.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .4 Make good any damage resulting from work of this contract.
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1.6 EXECUTION
(Cont'd)

- .5 Tradesmen qualified in the work being cut and patched shall be employed to ensure that works are correctly done.
 - .6 Core drill holes in areas after being located by the Trade concerned.
 - .7 Whenever it becomes necessary to cut or interfere in any manner with existing services or apparatus, do so at such times as approved by the Consultant.
 - .8 Whenever existing items are designated for relocation or removal, relocate or remove these items unless specified to be done by other sections of the Specification. All waste and debris shall be disposed of by the General Contractor.
 - .9 Coordinate work of all sections, taking into account existing installations to ensure best arrangement of components in available space. For critical locations, consult with Consultant prior to commencing work.
 - .10 Make good all surfaces and finishes to match existing in areas from which items have been removed or in which items are relocated. Cap off all existing services required to be severed to affect the alterations and do all other work necessary to make good such areas the Consultant's satisfaction.
 - .11 Core drill holes in concrete floors for piping where not previously sleeved, Do not use mechanical hammers or drills without prior approval in writing.
 - .12 Any cutting/patching required after completion of new works shall be done by the General Contractor at the Sub-Trade concerned's expense.
 - .13 Maintain all fire separations. Provide fire stopping at all penetrations in accordance with CAN4-5115.
 - .14 Uncover Work to install ill-timed Work.
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1.6 EXECUTION
(Cont'd)

- .15 Remove and replace defective and non-conforming Work.
 - .16 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
 - .17 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
 - .18 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
 - .19 Restore work with new products in accordance with requirements of Contract Documents.
 - .20 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
 - .21 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, full thickness of the construction element.
 - .22 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
 - .23 Conceal pipes, ducts and wiring in wall and ceiling construction of finished areas except where indicated otherwise.
 - .24 Reinstate sidewalks and lawns to pre-construction conditions
 - .25 Refer to the Hazardous Building Materials Assessment and the general specification notes relating to asbestos and hazardous materials abatement.
 - .26 Masonry shall be saw cut and patching shall be toothed in to match existing adjacent finish.
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PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

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| 1.1 Section Includes | .1 | Progressive cleaning. |
| | .2 | Final cleaning. |
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| 1.2 Project Cleanliness | .1 | Maintain Work in tidy condition, free from accumulation of waste products and debris, including other than that caused by Owner or other Contractors. |
| | .2 | Remove waste materials from site at regularly scheduled times or dispose of as directed by Section 01 74 21. Do not burn waste materials on site. |
| | .3 | Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris. |
| | .4 | Provide on-site containers for collection of waste materials and debris. |
| | .5 | Provide and use clearly marked separate bins for recycling. Refer to Section 01 74 21- Construction/Demolition Waste Management And Disposal. |
| | .6 | Remove waste material and debris from site and deposit in waste container at end of each working day. |
| | .7 | Dispose of waste materials and debris at designated approved dumping areas off site. |
| | .8 | Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations. |
| | .9 | Store volatile waste in covered metal containers, and remove from premises at end of each working day. |
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1.2 Project
Cleanliness
(Cont'd)

- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 Final Cleaning

- .1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
 - .2 Remove waste products and debris and leave Work clean and suitable for occupancy.
 - .3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
 - .4 Remove waste materials from site at regularly scheduled times. Do not burn waste materials on site.
 - .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
 - .6 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
 - .7 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors and ceilings.
 - .8 Clean lighting reflectors, lenses, and other lighting surfaces.
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| <u>1.3 Final Cleaning
(Cont'd)</u> | .9 | Vacuum clean and dust building interiors,
behind grilles, louvres and screens. |
| | .10 | Inspect finishes, fitments and equipment and
ensure specified workmanship and operation. |
| | .11 | Broom clean and wash exterior walks, steps and
surfaces; rake clean other surfaces of
grounds. |
| | .12 | Clean roofs, downspouts, and drainage systems. |

PART 2 - PRODUCTS

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| <u>2.1 Not Used</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 Not Used</u> | .1 | Not Used. |
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PART 1 - GENERAL

1.1 REGULATORY AGENCIES

- .1 The Ontario Ministry of Environment (OME) in accordance with Section 7 of Ontario Regulation 103/94 requires a source separation program for the waste that will be generated in the construction or demolition of a structure.
- .2 The source separation program required shall:
 - .1 Deal separately with each of the categories of waste set out in Part III of the Schedule that have been source separated from other kinds of waste and also from each other category of waste in Part III; or
 - .2 Provide for removal from the building site of any commingled categories of waste set out in Part III of the Schedule and for the immediate separation of such waste from all other kinds of waste and also from each category of waste in Part III, at
 - .1 permanent premises of the person undertaking the construction project
 - .2 permanent premises of the person on whose behalf the construction project is undertaken or
 - .3 a waste disposal site operating under the authority of a certificate of approval
- .3 The source separation program shall be implemented before construction work begins on site.

1.2 SUBMITTAL

- .1 Prepare and submit a waste reduction work plan. Describe management of construction wastes. Identify materials which can be recycled, reused and indicate methods proposed for reducing, reusing and recycling wastes.

1.3 WASTE COLLECTION AND DISPOSAL

- .1 Separate and salvage materials suitable for reuse and/or recycling from general waste stream.

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1.3 WASTE
COLLECTION AND
DISPOSAL
(Cont'd)

- .2 Provide on site facilities for collection, handling and storage of anticipated quantities of reusable and/or recyclable materials.
- .3 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .4 Collect, handle, store on site and transport off site, salvaged materials, salvaged for reuse and/or recycling in separate condition. Transport to authorized reuse/recycling location.
- .5 Separate non salvageable materials from salvaged items. Transport and deliver non salvageable items to licensed disposal facility.
- .6 Burying, burning, selling waste materials on site is prohibited.
- .7 Disposals of liquid wastes into waterways, sewers is prohibited.
- .8 Unless specified otherwise, materials for removal become Contractor's property.
- .9 Clean up work, storage and waste collection areas as work progresses.

PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | Administrative procedures preceding preliminary and final inspections of Work. |
| <u>1.2 Inspection and Declaration</u> | .1 | Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
.1 Notify Consultant in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
.2 Request Consultant's Inspection. |
| | .2 | Consultant's Inspection: Consultant and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly. |
| | .3 | Completion: submit written certificate that following have been performed:
.1 Work has been completed and inspected for compliance with Contract Documents.
.2 Defects have been corrected and deficiencies have been completed.
.3 Work is complete and ready for Final Inspection. |
| | .4 | Final Inspection: when items noted above are completed, request final inspection of Work by Consultant. If Work is deemed incomplete by Consultant, complete outstanding items and request re inspection. |

PART 1 - GENERAL

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| <u>1.1 Section Includes</u> | .1 | As-built, samples, and specifications. |
| | .2 | Equipment and systems. |
| | .3 | Product data, materials and finishes, and related information. |
| | .4 | Operation and maintenance data. |
| | .5 | Spare parts, special tools and maintenance materials. |
| | .6 | Warranties |
| <u>1.2 Related Sections</u> | .1 | Section 01 77 00 - Closeout Procedures. |
| | .2 | Section 01 91 00 - Commissioning. |
| <u>1.3 Submission</u> | .1 | Prepare instructions and data using personnel experienced in maintenance and operation of described products. |
| | .2 | Copy will be returned after final inspection, with Engineer's comments. |
| | .3 | Revise content of documents as required prior to final submittal. |
| | .4 | Submit to the Consultant one (1) hard copy and one USB thumb drive, PDF format of operating and maintenance manuals in English within 14 days of substantial completion. |
| <u>1.4 Format</u> | .1 | Organize data in the form of an instructional manual. |
| | .2 | Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets. |
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| <u>1.4 Format
(Cont'd)</u> | .3 | When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine. |
| | .4 | Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents. |
| | .5 | Arrange content by systems, process flow, under Section numbers and sequence of Table of Contents. |
| | .6 | Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment. |
| | .7 | Text: Manufacturer's printed data, or typewritten data. |
| | .8 | Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages. |
| <u>1.5 Contents - Each Volume</u> | .1 | Table of Contents: provide title of project;
.1 date of submission; names,
.2 addresses, and telephone numbers of Contractor with name of responsible parties;
.3 schedule of products and systems, indexed to content of volume. |
| | .2 | For each product or system:
.1 list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts. |
| | .3 | Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. |
| | .4 | Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. |
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<u>1.5 Contents - Each Volume (Cont'd)</u>	.5	Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.
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<u>1.6 As-builts and Samples</u>	.1	In addition to requirements in General Conditions, maintain at the site for Consultant one record copy of: .1 Contract Drawings. .2 Specifications. .3 Addenda. .4 Change Orders and other modifications to the Contract. .5 Reviewed shop drawings, product data, and samples. .6 Field test records. .7 Inspection certificates. .8 Manufacturer's certificates.
	.2	Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
	.3	Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
	.4	Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
	.5	Keep record documents and samples available for inspection by Consultant.

<u>1.7 Recording Actual Site Conditions</u>	.1	Contractor shall maintain two sets of white prints for record drawing purposes. Record changes and at completion of project submit one marked to the Consultant.
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| 1.7 Recording
Actual Site
Conditions
(Cont'd) | .2 | Provide felt tip marking pens, maintaining separate colours for each major system, for recording information. |
| | .3 | Record information concurrently with construction progress. Do not conceal Work until required information is recorded. |
| | .4 | Contract Drawings and shop drawings: legibly mark each item to record actual construction, including: <ul style="list-style-type: none">.1 Measured depths of elements of foundation in relation to finish first floor datum..2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements..3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction..4 Field changes of dimension and detail..5 Changes made by change orders..6 Details not on original Contract Drawings..7 References to related shop drawings and modifications. |
| | .5 | Specifications: legibly mark each item to record actual construction, including: <ul style="list-style-type: none">.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items..2 Changes made by Addenda and change orders. |
| | .6 | Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections. |

1.8 Final Survey .1 At completion of project, transfer recorded changes to Construction drawings and submit one set of as-built drawings to Consultant. Consultant will furnish copy of original construction drawings in electronic .dwg format. As built drawing submission shall include one (1) marked copy of the construction drawings, one (1) hard copy of the As Built drawings and one (1) copy of As Built drawings in electronic .dwg format. All drawings shall be submitted and marked as built.

1.9 Equipment and Systems .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

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| 1.9 Equipment and Systems
(Cont'd) | .7 | Include manufacturer's printed operation and maintenance instructions. |
| | .8 | Include sequence of operation by controls manufacturer. |
| | .9 | Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance. |
| | .10 | Provide installed control diagrams by controls manufacturer. |
| | .11 | Provide Contractor's coordination drawings, with installed colour coded piping diagrams. |
| | .12 | Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams. |
| | .13 | Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage. |
| | .14 | Include test and balancing reports as specified. |
| | .15 | Additional requirements: As specified in individual specification sections. |
| 1.10 Materials and Finishes | .1 | Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. |
| | .2 | Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance. |
| | .3 | Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance. |
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| 1.10 Materials and
Finishes
(Cont'd) | .4 | Additional Requirements: as specified in individual specifications sections. |
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| 1.11 Storage,
Handling and
Protection | .1 | Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration. |
| | .2 | Store in original and undamaged condition with manufacturer's seal and labels intact. |
| | .3 | Store components subject to damage from weather in weatherproof enclosures. |
| | .4 | Store paints and freezable materials in a heated and ventilated room. |
| | .5 | Remove and replace damaged products at own expense and to satisfaction of Engineer. |
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| 1.12 Warranties | .1 | Separate each warranty or bond with index tab sheets keyed to Table of Contents listing. |
| | .2 | List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal. |
| | .3 | Obtain warranties, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. |
| | .4 | Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined. |
| | .5 | Verify that documents are in proper form, contain full information, and are notarized. |
| | .6 | Co-execute submittals when required. |
| | .7 | Retain warranties until time specified for submittal. |
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PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

<u>1.1 Section Includes</u>	.1	Includes general requirements for commissioning facilities and facility systems.
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<u>1.2 Related Sections</u>	.1	Section 01 45 00 - Quality Control.
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<u>1.3 Quality Assurance</u>	.1	Co-operate with testing organization services under provisions specified in Section 01 45 00 - Quality Control.
	.2	Testing organization: certified to perform specified services.
	.3	Comply with applicable procedures and standards of the certification sponsoring association.
	.4	Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

<u>1.4 Submittals</u>	.1	Prior to start of Work, submit name of organization proposed to perform services. Designate who has managerial responsibilities for coordination of entire testing, adjusting and balancing.
	.2	Submit documentation to confirm organization compliance with quality assurance provision.
	.3	Submit preliminary specimen copies of each of report forms proposed for use.
	.4	Fifteen days prior to Substantial Performance, submit 3 copies of final reports on applicable forms.

<u>1.4 Submittals (Cont'd)</u>	.5	Submit reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond Contractor's control, promptly after execution of those services.
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<u>1.5 Procedures - General</u>	.1	Comply with procedural standards of certifying association under whose standard services will be performed.
	.2	Notify Engineer 3 days prior to beginning of operations.
	.3	Accurately record data for each step.
	.4	Report to Engineer any deficiencies or defects noted during performance of services.

<u>1.6 Final Reports</u>	.1	Organization having managerial responsibility shall make reports.
	.2	Ensure each form bears signature of recorder, and that of supervisor of reporting organization.
	.3	Identify each instrument used, and latest date of calibration of each.

<u>1.7 Contractor Responsibilities</u>	.1	Prepare each system for testing and balancing.
	.2	Cooperate with testing organization and provide access to equipment and systems.
	.3	Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.
	.4	Notify testing organization 7 days prior to time project will be ready for testing, adjusting, and balancing.

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| <u>1.8 Preparation</u> | .1 | Provide instruments required for testing, adjusting, and balancing operations. |
| | .2 | Make instruments available to Engineer to facilitate spot checks during testing. |
| | .3 | Retain possession of instruments and remove at completion of services. |
| | .4 | Verify systems installation is complete and in continuous operation. |
| | .5 | Verify lighting is turned on when lighting is included in cooling load. |
| | .6 | Verify equipment such as computers, laboratory and electronic equipment are in full operation. |

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| <u>1.9 Execution</u> | .1 | Test equipment, balance distribution systems, and adjust devices for HVAC systems. |
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PART 2 - PRODUCTS

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| <u>2.1 Not Used</u> | .1 | Not Used. |
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PART 3 - EXECUTION

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| <u>3.1 Not Used</u> | .1 | Not Used. |
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PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .1 | Canadian Standards Association (CSA International)
.1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures. |
| <u>1.2 SUBMITTALS</u> | .1 | Submit shop drawings in accordance with Sections 01 33 00 - Submittal Procedures. |
| | .2 | Before proceeding with demolition of load bearing walls and where required by authority having jurisdiction submit for review by Consultant shoring drawings prepared by qualified professional engineer registered or licensed in the Province of Ontario, showing proposed method. |
| | .3 | Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Sections 01 74 21 - Construction/Demolition Waste Management and Disposal and indicate:
.1 Descriptions of and anticipated quantities in percentages of materials to be salvaged reused, recycled and landfilled.
.2 Schedule of selective demolition.
.3 Number and location of dumpsters.
.4 Anticipated frequency of tipping.
.5 Name and address of haulers waste facilities waste receiving organizations. |
| <u>1.3 WASTE MANAGEMENT AND DISPOSAL</u> | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21 Construction/Demolition Waste Management and Disposal. |
| <u>1.4 SITE CONDITIONS</u> | .1 | Review "Designated Substance Report" and take precautions to protect environment. |
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- 1.4 SITE CONDITIONS (Cont'd)
- .2 Should material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Consultant immediately.
- .1 Do not proceed until written instructions have been received from Consultant.
- .3 Notify Consultant before disrupting building access or services.

PART 2 - PRODUCTS

- 2.1 NOT USED
- .1 Not used.

PART 3 - EXECUTION

- 3.1 PROTECTION
- .1 Prevent movement, settlement, or damage to parts of building to remain in place. Provide bracing and shoring required.
- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building systems, services and equipment.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
- .5 Do Work in accordance with Section 01 70 12 - Safety Requirements.

- 3.2 SALVAGE
- .1 Refer to demolition drawings and specifications for items to be salvaged for reuse.
- .2 Remove items to be reused, store as directed by owner, and re-install.
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3.3 DEMOLITION .1 Remove parts of existing building to permit new construction. Sort materials into appropriate piles for reuse and recycling

3.4 DISPOSAL .1 Dispose of removed materials, to appropriate recycling facilities except where specified otherwise, in accordance with authority having jurisdiction.

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .1 | American Society for Testing and Materials International, (ASTM)
.1 ASTM C 920, Standard Practice for Use of Sealants. |
| | .2 | Canadian General Standards Board (CGSB)
.1 CGSB 19-GP-17M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
.2 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
.3 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound. |
| <u>1.2 SUBMITTALS</u> | .1 | Submit product data in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Manufacturer's product to describe.
.1 Caulking compound.
.2 Primers.
.3 Sealing compound, each type, including compatibility when different sealants are in contact with each other. |
| <u>1.3 DELIVERY, STORAGE, AND HANDLING</u> | .1 | Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements. |
| | .2 | Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor. |
| <u>1.4 WASTE MANAGEMENT AND DISPOSAL</u> | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21 Construction/Demolition Waste Management And Disposal. |

1.4 WASTE MANAGEMENT AND DISPOSAL <u>(Cont'd)</u>	.2	Remove from site and dispose of packaging materials at appropriate recycling facilities.
	.3	Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

1.5 PROJECT CONDITIONS <u></u>	.1	Environmental Limitations: .1 Do not proceed with installation of joint sealants under following conditions: .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C. .2 When joint substrates are wet.
	.2	Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
	.3	Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.6 ENVIRONMENTAL REQUIREMENTS <u></u>	.1	Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.
	.2	Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

PART 2 - PRODUCTS

2.1 SEALANT MATERIALS

- .1 Materials: Approved Manufactures - Tremco, Sika, or Dow Corning.
- .2 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.
- .3 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.
- .4 Where sealants are qualified with primers use only these primers.

2.2 SEALANT MATERIAL DESIGNATIONS

- .1 Type 1: low modulus, one component, moisture curing, modified polyurethane joint sealer to: ULC CAN4 S115 CAN/CGSB-19.13-M87, ASTM C 920-02, Type S, Grade NS Class 25.
- .2 Type 2: One part, moisture cure, general purpose construction grade acetoxysilicone sealant to ASTM C920-02, Type S, Grade NS, CAN/CGSB-19.13-M87.
- .3 Type 3: Tremco, Trimsill one part, siliconized acrylic latex, fast setting, pliable seal with minimum shrinkage sealant to ASTM C.834, CAN/CGSB 19.GP-17M.
- .4 Preformed Compressible and Non-Compressible back-up materials.
 - .1 Polyethylene, Urethane, Neoprene or Vinyl Foam.
 - .1 Extruded closed cell foam backer rod.
 - .2 Size: oversize 30 to 50 %.
 - .2 Bond Breaker Tape.
 - .1 Polyethylene bond breaker tape which will not bond to sealant.

- 2.3 SEALANT SELECTION
- .1 Interior control and expansion joints in floor surfaces: Sealant type: 3.
 - .2 Perimeters of interior frames, as detailed and itemized: Sealant type: 3.
 - .3 Joints at perimeter of non-load bearing Gypsum board Sealant type: 4.
 - .4 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, waterclosets, basins, vanities): Sealant type: 2.
 - .5 Exposed interior control joints in drywall: Sealant type: 3.

- 2.4 JOINT CLEANER
- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
 - .2 Primer: as recommended by manufacturer.

PART 3 - EXECUTION

- 3.1 PROTECTION
- .1 Protect installed Work of other trades from staining or contamination.

- 3.2 SURFACE PREPARATION
- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
 - .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.
 - .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
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3.2 SURFACE PREPARATION (Cont'd) .4 Ensure joint surfaces are dry and frost free.
.5 Prepare surfaces in accordance with manufacturer's directions.

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 BACKUP MATERIAL .1 Apply bond breaker tape where required to manufacturer's instructions.
.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 APPLICATION .1 Sealant.
.1 Apply sealant in accordance with manufacturer's written instructions.
.2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
.3 Apply sealant in continuous beads.
.4 Apply sealant using gun with proper size nozzle.
.5 Use sufficient pressure to fill voids and joints solid.
.6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
.7 Tool exposed surfaces before skinning begins to give slightly concave shape.
.8 Remove excess compound promptly as work progresses and upon completion.
.2 Curing.
.1 Cure sealants in accordance with sealant manufacturer's instructions.

- 3.5 APPLICATION
(Cont'd)
- .2 (Cont'd)
.2 Do not cover up sealants until proper curing has taken place.
- .3 Cleanup.
.1 Clean adjacent surfaces immediately and leave Work neat and clean.
.2 Remove excess and droppings, using recommended cleaners as work progresses.
.3 Remove masking tape after initial set of sealant.

PART 1 - GENERAL

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| <u>1.1 Related Sections</u> | .1 | Section 07 92 10 - Joint Sealing: Caulking of joints between frames and other building components. |
| | .2 | Section 08 71 10 - Door Hardware - General: Supply of finish hardware, including weatherstripping and mounting heights. |
| | .3 | Section 08 80 50 - Glazing. |
| | .4 | Section 09 91 23 - Painting. |

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| <u>1.2 References</u> | .1 | Canadian General Standards Board (CGSB)
.1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating. |
| | .2 | Canadian Standards Association (CSA International)
.1 G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
.2 CSA W59-M1989(R2001), Welded Steel Construction (Metal Arc Welding) (Metric Version). |
| | .3 | Canadian Steel Door Manufacturers' Association, (CSDMA).
.1 CSDMA, Specifications for Commercial Steel Doors and Frames, 1990.
.2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 1990. |

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| <u>1.3 Shop Drawings</u> | .1 | Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed louvred, arrangement of hardware and fire rating and finishes. |
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| <u>1.3 Shop Drawings
(Cont'd)</u> | .3 | Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and reinforcing fire rating finishes. |
| | .4 | Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule. |

PART 2 - PRODUCTS

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| <u>2.1 Materials</u> | .1 | Hot dipped galvanized steel sheet: to ASTM A 653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts. |
| | .2 | Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A 653M, ZF75. |
| <u>2.2 Door Core Materials</u> | .1 | Stiffened: insulated core.
.1 Polyurethane: to CAN/ULC-S704 rigid, modified poly/isocyanurate, closed cell board. Density 32 kg/m ³ . |
| <u>2.3 Adhesives</u> | .1 | Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement. |
| <u>2.4 Primer</u> | .1 | Touch-up prime CAN/CGSB-1.181. |
| <u>2.5 Accessories</u> | .1 | Door silencers: single stud rubber/neoprene type. |
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2.5 Accessories
(Cont'd)

- .2 Fabricate glazing stops as formed channel, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
- .3 Metallic paste filler: to manufacturer's standard.
- .4 Fire labels: metal riveted.
- .5 Sealant:07 92 10.
- .6 Glazing:08 80 50.
- .7 Make provisions for glazing as indicated and provide necessary glazing stops.

2.6 Frames
Fabrication General

- .1 Fabricate frames in accordance with CSDMA specifications.
 - .2 Fabricate frames to profiles and maximum face sizes as indicated.
 - .3 Interior frames: 1.6 mm (16 gauge) welded type construction.
 - .4 Blank, reinforce, drill and tap frames for mortised, templated hardware, and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
 - .5 Protect mortised cutouts with steel guard boxes.
 - .6 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
 - .7 Manufacturer's nameplates on frames and screens are not permitted.
 - .8 Conceal fastenings except where exposed fastenings are indicated.
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2.6 Frames Fabrication General (Cont'd)	.9	Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.
2.7 Frame Anchorage	.1	Provide appropriate anchorage to floor and wall construction.
	.2	Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
	.3	Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.
	.4	Locate anchors for frames in existing openings not more than 150 mm (6") from top and bottom of each jambs and intermediate at 660 mm (26") o.c. maximum.
2.8 Frames: Welded Type	.1	Welding in accordance with CSA W59.
	.2	Accurately mitre or mechanically joint frame product and securely weld on inside of profile.
	.3	Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.
	.4	Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
	.5	Securely attach floor anchors to inside of each jamb profile.
	.6	Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.
2.9 Door Fabrication General	.1	Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.

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| 2.9 Door
Fabrication General
(Cont'd) | .2 | Doors: insulated hollow steel construction. |
| | .3 | Fabricate doors with longitudinal edges locked seamed, adhesive assisted, visible. |
| | .4 | Blank, reinforce, drill doors and tap for mortised, templated hardware and electronic hardware. |
| | .5 | Factory prepare holes 12.7 mm (1/2") diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation. |
| | .6 | Reinforce doors where required, for surface mounted hardware. Provide inverted, recessed, spot welded channels to top and bottom of interior doors. |
| | .7 | Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication. |
| | .8 | Manufacturer's nameplates on doors are not permitted. |
| 2.10 Hollow Steel
Construction | .1 | Form each face sheet for interior and exterior doors from 1.6 mm (16 gauge) sheet steel. |

PART 3 - EXECUTION

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| 3.1 Installation
General | .1 | Install doors and frames to CSDMA Installation Guide. |
| 3.2 Frame
Installation | .1 | Set frames plumb, square, level and at correct elevation. |
| | .2 | Secure anchorages and connections to adjacent construction. |
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| 3.2 Frame
Installation
(Cont'd) | .3 | Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm (4'0") wide. Remove temporary spreaders after frames are built-in. |
| | .4 | Make allowances for deflection of structure to ensure structural loads are not transmitted to frames. |
| | .5 | Caulk perimeter of frames between frame and adjacent material. |
| 3.3 Door
Installation | .1 | Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 10 - Door Hardware - General. |
| | .2 | Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.
.1 Hinge side: 1.0 mm (.0418").
.2 Latchside and head: 1.5 mm (.059").
.3 Finished floor, top of carpet noncombustible sill and thresholds: 13 mm (1/2"). |
| | .3 | Adjust operable parts for correct function. |
| 3.4 Finish Repairs | .1 | Touch up with primer finishes damaged during installation. |
| | .2 | Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish. |
| 3.5 Glazing | .1 | Install glazing for doors and frames in accordance with Section 08 80 50 - Glazing. |

PART 1 - GENERAL

1.1 RELATED SECTIONS .1 Section 08 11 14 - Metal Doors and Frames.

1.2 REFERENCES .1 Canadian Steel Door and Frame Manufacturer's Association (CSDFMA).
.1 CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction): standard hardware location dimensions.
.2 Standards.
.1 ANSI/BHMA A156.1-1981, Butts and Hinges.
.2 ANSI/BHMA A156.3-1984, Exit Devices.
.3 ANSI/BHMA A156.4-1986, Door Controls (Closers).
.4 ANSI/BHMA A156.5-1984, Auxiliary Locks and Associated Products.
.5 ANSI/BHMA A156.6-1986, Architectural Door Trim.
.6 ANSI/BHMA A156.8-1982, Door Controls - Overhead Holders.
.7 ANSI/BHMA A156.10-1991, Power-operated Pedestrian Doors.
.8 ANSI/BHMA A156.12-1986, Interconnected Locks and Latches.
.9 ANSI/BHMA A156.13-1987, Mortise Locks and Latches.
.10 ANSI/BHMA A156.18-1987, Materials and Finishes.
.11 ANSI/BHMA A156.19-1984, Power Assist and Low Energy Power Operated Doors.
.3 ULC-S132-93 (R2001) Emergency exit and emergency fire exit hardware.

1.3 SUBMITTALS .1 Product Data:
.1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
.2 Hardware List:

1.3 SUBMITTALS
(Cont'd)

- .2 (Cont'd)
 - .1 Submit contract hardware list in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .3 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
- .4 Furnish other sections with two (2) complete sets of hardware templates for related fabricating and installation.
- .5 Submit for owner review and comments two (2) key schedules listing the door number, hardware heading or item, lock function and the key group.
- .6 Closeout Submittals
 - .1 Provide operation and maintenance data for door closers, locksets, door holders electrified hardware and fire exit hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .7 Submit warranty.

1.4 QUALITY
ASSURANCE

- .1 Regulatory Requirements: Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.
- .2 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

1.5 DELIVERY,
STORAGE, AND
HANDLING

- .1 Packing, Shipping, Handling and Unloading:
 - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
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| <u>1.5 DELIVERY,
STORAGE, AND
HANDLING
(Cont'd)</u> | .1 | (Cont'd) |
| | .2 | Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location. |
| | .2 | Storage and Protection: |
| | .1 | Store finishing hardware in locked, clean and dry area. |
| | .3 | Where required, package items of hardware separately for delivery to other fabricators for their installation. |
| <u>1.6 WASTE DISPOSAL
AND MANAGEMENT</u> | .1 | Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal. |
| | .2 | Remove from site and dispose of packaging materials at appropriate recycling facilities. |
| | .3 | Dispose of packaging material in appropriate on-site bin for recycling in accordance with site waste management program. |
| <u>1.7 MAINTENANCE</u> | .1 | Extra Materials: |
| | .1 | Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals. |
| | .2 | Supply two sets of wrenches for door closers locksets and fire exit hardware. |
| <u>1.8 WARRANTY</u> | .1 | Contractor hereby warrants materials and installation for the following: |
| | .1 | All hardware: three (3) years supply and install. |
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PART 2 - PRODUCTS

- 2.1 HARDWARE ITEMS .1 Use one manufacturer's products only for similar items.
- 2.2 DOOR HARDWARE .1 Locks and latches:
- .1 Locks and latches: to ANSI/BHMA A156.2, Series 4000, Grade 1, cylindrical locksets, designed for function as stated in Door Schedule. Locks to be Best Locks.
 - .2 Latch bolts to be anti friction with separate latch guard.
 - .3 ULC labels and 19mm throw for all fire rated doors.
 - .4 Auxiliary dead bolts to have hardened steel pin inserts.
 - .5 Where lever trim is required, trim to have concealed through bolt mounting and the lever is to be solid cast or forged material with a return to the door face.
 - .6 Finished as stated in Hardware Schedule.
 - .7 Acceptable Manufacturers:
 - .1 Corbin.
 - .2 Yale
 - .3 Sargent
 - .4 Schlage
 - .5 Stanley/Best
- .2 Butts and hinges:
- .1 Butts and hinges: to ANSI/BHMA A156.1, three knuckle concealed bearing. Exterior out swing doors must be non-ferrous and have non-removable pins (NRP).
 - .2 Acceptable Manufacturers:
 - .1 Hager
 - .2 McKinney
 - .3 Stanley
- .3 Door Closers and Accessories:
- .1 Door controls (closers): to ANSI/BHMA A156.4.
 - .2 To have full adjustment features including back check, general speed, and latch speed control.
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2.2 DOOR HARDWARE
(Cont'd)

- .3 (Cont'd)
- .3 All interior door closers to have reduced opening force spring power of 22N as required by the barrier free codes.
- .4 Surface mounted door closers are to be located on the room side of the door whenever possible.
- .5 Provide all mounting plates for door closers required to mount on special door and frame conditions. Check all door and frame details from related trades to ensure dimensions have not changed and hardware will not conflict with window lite kits.
- .6 Where listed, door closers are to have full body covers to match the project finishes.
- .7 Acceptable Manufacturers:
- .1 LCN
- .4 Architectural door trim: to ANSI/BHMA A156.6, as listed in Hardware Schedule.
- .1 All kickplates, push plates, and bumper plates must have all sides bevelled and corners rounded to ensure there are no sharp edges. Supply plates with tape mounting or if screws are listed, with counter sunk screw holes. The plates will be .050 thick unless listed otherwise. Size to suit door width. Kickplate will be door width less 35 mm for single door and less 25 mm for pairs of doors.
- .2 When push plates are listed with door pulls, install the push plate to conceal the through bolt.
- .3 Pulls to be supplied with back to back (BTB) or through bolt mounting.
- .4 Acceptable Manufacturers:
- .1 Hager
- .2 CBH
- .3 Standard
- .5 Door stops and holders:
- .1 Wall stops are only to be used on proper wall conditions such as block or masonry. Supply floor stops with sufficient height to suite the floor condition or undercut of doors.

2.2 DOOR HARDWARE
(Cont'd)

- .5 (Cont'd)
 - .2 Overhead stops and holders to be surface mounted unless there is a conflict with door closers or other hardware. Provide door stays with friction action in locations that do not have door closers. Install overhead stops and holders for 90 DEG stop unless otherwise specified.
 - .3 Acceptable Manufacturers:
 - .1 Rixson
 - .2 Sargent
 - .3 Glynn-Johnson
 - .4 Hager
- .6 Door Operators:
 - .1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.
 - .2 Door operators will be supplied and installed as listed. Electro-mechanical operator, powered by 1/4 hp motor. Power Transmission has only one moving part, ensuring superior reliability and low overall maintenance. Operator is non-handed to insure maximum versatility in adapting to varying field conditions. The operator housing provides a seal against dust, dirt and moisture.
 - .3 A self-contained, solid state integrated circuit controls the operation and switching of the seing power operator. The electronic control provides low voltage power supply for all means of actuation. No external or auxiliary low voltage power source will be allowed. The controls include time delay (5 to 30 seconds) for normal cycle.
 - .4 Interfaced with the transmission system is a DC shunt-wound permanent magnet motor with sealed bal bearnings. System operates from 120 VAC-60 cycle-1 phase power supply. Operator is mounted in the header case housing using vibration isolators to maintain quiet operation.
 - .5 Acceptable Products:
 - .1 Operator: Entrematic, HA-8 x cast motor c/w 3 Amp power supply. Finish: 689.
 - .2 Actuator Button: BEA, 10PBS451. Finish: 630.

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|---------------------------------------|-------------|--|
| <u>2.2 DOOR HARDWARE
(Cont'd)</u> | .6 (Cont'd) | |
| | .5 (Cont'd) | |
| | .3 | Surface Box: BEA, 10BOX45SQSM.
Finish: BL. |
| <u>2.3 FASTENINGS</u> | .1 | Use only fasteners provided by manufacturer.
Failure to comply may void warranties and
applicable licensed labels. |
| | .2 | Supply screws, bolts, expansion shields and
other fastening devices required for
satisfactory installation and operation of
hardware. |
| | .3 | Exposed fastening devices to match finish of
hardware. |
| | .4 | Use fasteners compatible with material through
which they pass. |
| <u>2.4 KEYING</u> | .1 | All keyed locksets including full height
teachers stoarge cabinet locks to be Best
locks and shall be keyed differently. Master
keyed to Owner's request. |
| | .2 | Provide keys in duplicate for every lock in
this Contract. |
| | .3 | Provide three masterkeys for each MK or GMK
group. |
| | .4 | Stamp keying code numbers on keys and
cylinders. |

PART 3 - EXECUTION

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| <u>3.1 MANUFACTURER'S
INSTRUCTIONS</u> | .1 | Compliance: comply with manufacturer's written
data, including product technical bulletins,
product catalogue installation instructions,
product carton installation instructions, and
data sheets. |
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| <u>3.1 MANUFACTURER'S INSTRUCTIONS (Cont'd)</u> | .2 | Furnish door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware. |
| | .3 | Furnish manufacturers' instructions for proper installation of each hardware component. |
| <u>3.2 INSTALLATION</u> | .1 | Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association. |
| | .2 | Use only manufacturer's supplied fasteners. Failure to comply may void manufacturer's warranties and applicable licensed labels. Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable. |
| <u>3.3 ADJUSTING</u> | .1 | Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure. |
| | .2 | Lubricate hardware, operating equipment and other moving parts. |
| | .3 | Adjust door hardware to provide tight fit at contact points with frames. |
| <u>3.4 CLEANING</u> | .1 | Perform cleaning after installation to remove construction and accumulated environmental dirt. |
| | .2 | Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions. |
| | .3 | Remove protective material from hardware items where present. |
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| 3.4 CLEANING
(Cont'd) | .4 | Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers. |
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PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .1 | American Society for Testing and Materials International, (ASTM)
.1 ASTM C 475/C 475M-02, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
.2 ASTM C 840-02, Specification for Application and Finishing of Gypsum Board.
.3 ASTM C 1002-01, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
.4 ASTM C 1047-99, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base. |
| <u>1.2 DELIVERY, STORAGE AND HANDLING</u> | .1 | Store materials inside, level, under cover. Keep dry. Protect from weather, other elements and damage from construction operations and other causes. |
| | .2 | Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged. |
| <u>1.3 WASTE MANAGEMENT AND DISPOSAL</u> | .1 | Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal. |

PART 2 - PRODUCTS

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| <u>2.1 MATERIALS</u> | .1 | Walls: Abuse resistant (5/8") 15.9 mm thick, type 'X' (5/8") 15.9 mm thick, (4'-0") 1220mm wide x maximum practical length, edges bevelled. |
| | .2 | Nails: to ASTM C 514-01. |
-

2.1 MATERIALS
(Cont'd)

- .3 Metal furring channels, runner channels, hangers, tie wires, inserts and anchors.
- .4 Joint compound: to ASTM C 475c 475M-02 Asbestos free.
- .5 Steel drill screws: to ASTM C 1002-01.
- .6 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047-99, metal, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .7 Sealants: in accordance with Section 07 92 10 - Joint Sealing.
- .8 Joint compound: to ASTM C 475/C 475M-02, asbestos-free.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Do application and finishing of gypsum board in accordance with ASTM C 840-02 except where specified otherwise.
 - .2 Do application of gypsum sheathing in accordance with ASTM C 1280-99.
 - .3 Install work level to tolerance of 1:1200.
 - .4 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C 840-02 except where specified otherwise.
 - .5 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
 - .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.
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<u>3.1 ERECTION</u> (Cont'd)	.7	Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
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<u>3.2 APPLICATION</u>	.1	Apply single layer gypsum board to metal studs using screw fasteners Maximum spacing of screws (12") 300 mm on centre. .1 Single-Layer Application: .1 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
	.2	Install gypsum board with face side out.
	.3	Do not install damaged or damp boards.
	.4	Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

<u>3.3 INSTALLATION</u>	.1	Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at (6") 150 mm on centre
	.2	Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
	.3	Finish face panel joints with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
	.4	Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:

3.3 INSTALLATION
(Cont'd)

- .4 (Cont'd)
 - .1 Level 4: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
- .5 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .6 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .7 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .8 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

PART 1 - GENERAL

<u>1.1 RELATED SECTIONS</u>	.1	Section 09 21 16 - Gypsum Board Assemblies.
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<u>1.2 REFERENCES</u>	.1	American Society for Testing and Materials International, (ASTM). .1 ASTM C 645-00, Specification for Nonstructural Steel Framing Members. .2 ASTM C 754-00, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
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<u>1.3 WASTE MANAGEMENT AND DISPOSAL</u>	.1	Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management.
	.2	Remove from site and dispose of packaging materials at appropriate recycling facilities.
	.3	Divert unused metal materials from landfill to metal recycling facility.

PART 2 - PRODUCTS

<u>2.1 MATERIALS</u>	.1	Non-load bearing channel stud framing: to ASTM C 645-00, stud size indicated on drawings, roll formed from 0.91 mm (20 gauge) thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at (18") 460 mm centres.
	.2	Floor & Ceiling Tracks: to ASTM C 645-00, in widths to suit stud sizes, (1 1/4") 32 mm flange height. Deflection tracks with 50mm flange height.
	.3	Metal channel stiffener: 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.

2.1 MATERIALS
(Cont'd)

- .4 Insulating strip: rubberized, moisture resistant 3 mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 600 mm on centre maximum.
 - .2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.
 - .3 Place studs vertically at 400 mm on centre and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
 - .4 Erect metal studding to tolerance of 1:1000.
 - .5 Attach studs to bottom track using screws.
 - .6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
 - .7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.
 - .8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
-

3.1 ERECTION
(Cont'd)

- .9 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .10 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .11 Provide 38mm solid wood furring secured between studs for attachment of millwork and fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.
- .12 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .13 Extend partitions to underside of structural roof/floor deck except where noted otherwise on drawings.
- .14 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use double track slip joint.
- .15 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .16 Install insulating strip under studs and tracks around perimeter of sound control partitions.
- .17 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.2 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

PART 1 - GENERAL

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|---|----|--|
| <u>1.1 SUMMARY</u> | .1 | Section Includes:
.1 Materials and application of acoustical units for direct application or for application and installation within a suspended ceiling. |
| | .2 | Related Sections:
.1 Section 09 53 00 - Acoustical Suspension: Suspension system. |
| <u>1.2 REFERENCES</u> | .1 | American Society for Testing and Materials International (ASTM)
.1 ASTM C 423-02, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
.2 ASTM E 1264-98, Standard Classification for Acoustical Ceiling Products. |
| | .2 | Canadian General Standards Board (CGSB)
.1 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units. |
| | .3 | Underwriter's Laboratories of Canada (ULC)
.1 CAN/ULC-S102-2003, Surface Burning Characteristics of Building Materials and Assemblies. |
| <u>1.3 SUBMITTALS</u> | .1 | Submit samples in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Submit duplicate 100mm x 100mm samples of each type acoustical units. |
| <u>1.4 DELIVERY, STORAGE AND HANDLING</u> | .1 | Protect on site stored or installed absorptive material from moisture damage. |
| | .2 | Waste Management and Disposal: |
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| 1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd) | .2 (Cont'd) | |
| | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21-Construction/Demolition Waste Management and Disposal. |
| | .2 | Remove from site and dispose of packaging materials at appropriate recycling facilities. |
| | .3 | Fold up metal and plastic banding, flatten and place in designated area for recycling. |

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| <u>1.5 EXTRA MATERIALS</u> | .1 | Provide acoustical units amounting to 2% of gross ceiling area for each pattern and type required for project. |
| | .2 | Ensure extra materials are from same production run as installed materials. |
| | .3 | Clearly identify each type of acoustic unit, including colour and texture. |
| | .4 | Deliver to Owner, upon completion of the work of this section. |

PART 2 - PRODUCTS

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|----------------------|----|---|
| <u>2.1 MATERIALS</u> | .1 | Acoustic units for suspended ceiling system: to CAN/CGSB-92.1-M89 ASTM E 1264-98. |
| | .1 | 610mm x 1220mm x 16mm (24" x 48" x 5/8"), square edge, white. |
| | .1 | Acceptable product: |
| | .1 | Radar ClimaPlus by CGC or approved equal. |

PART 3 - EXECUTION

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| <u>3.1 EXAMINATION</u> | .1 | Do not install acoustical panels and tiles until work above ceiling has been inspected by Consultant. |
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3.2 INSTALLATION .1 Install acoustical panels and tiles in ceiling suspension system.

3.3 APPLICATION .1 Install acoustical units as indicated on reflected ceiling plan.
.2 Scribe acoustic units to fit adjacent work. Butt joints tight, terminate edges with moulding.

3.4 INTERFACE WITH OTHER WORK .1 Co-ordinate with Section 09 53 00 - Acoustical Suspension.
.2 Co-ordinate ceiling work to accommodate components of other sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.

PART 1 - GENERAL

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| <u>1.1 Related Sections</u> | .1 | Section 09 51 13 - Acoustical Ceilings: Acoustical units. |
| <u>1.2 References</u> | .1 | American Society for Testing and Materials (ASTM International)
.1 ASTM C 635, Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
.2 ASTM C 636, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels. |
| <u>1.3 Design Requirements</u> | .1 | Maximum deflection: 1/360th of span to ASTM deflection test. |
| <u>1.4 Shop Drawings</u> | .1 | Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures. |
| <u>1.5 Waste Management and Disposal</u> | .1 | Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management. |
| | .2 | Divert unused metal materials from landfill to metal recycling facility. |
| | .3 | Remove from site and dispose of packaging materials at appropriate recycling facilities. |

PART 2 - PRODUCTS

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| <u>2.1 Materials</u> | .1 | Suspension system to ASTM C 635. |
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| <u>2.1 Materials</u>
(Cont'd) | .2 | Basic materials for suspension system: commercial quality cold rolled steel mill finished. |
| | .3 | Suspension system: Heavy duty two directional exposed tee bar grid system:
.1 Two directional exposed tee bar 610 mm x 1220mm grid.
.2 Acceptable product: Donn DX/DXL by CGC or approved equal. |
| | .4 | Exposed tee bar grid components: shop painted satin sheen white. Components die cut. Main tee with double web, rectangular bulb and 25 mm rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection. |
| | .5 | Hanger wire: galvanized soft annealed steel wire.
.1 3.6 mm diameter for access tile ceilings. |
| | .6 | Accessories: splices, clips, wire ties, retainers, wall moulding flush and preformed corner cover, to complement suspension system components, as recommended by system manufacturer. |

PART 3 - EXECUTION

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| <u>3.1 Installation</u> | .1 | Installation: in accordance with ASTM C 636 except where specified otherwise. |
| | .2 | Install suspension system to manufacturer's instructions. |
| | .3 | Do not erect ceiling suspension system until work above ceiling has been inspected by. Consultant. |
| | .4 | Secure hangers system to existing structural steel. |
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3.1 Installation (Cont'd)

- .5 Install hangers spaced at maximum 1200 mm centres and within 150 mm from ends of main tees.
- .6 Lay out centre line of ceiling both ways, to provide balanced borders at room perimeter with border units not less than 50% of standard unit width, also refer to reflected ceiling plan.
- .7 Ensure suspension system is co-ordinated with location of related components.
- .8 Install wall moulding to provide correct ceiling height.
- .9 Completed suspension system to support super-imposed loads, such as lighting fixtures diffusers grilles and speakers.
- .10 Support at light fixtures and diffusers with additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .11 Interlock cross member to main runner to provide rigid assembly.
- .12 Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.
- .13 Finished ceiling system to be square with adjoining walls and level within 1:1000.
- .14 Install perimeter trim.
- .15 Install preformed corner cover to all bullnosed block corners.

3.2 Cleaning

- .1 Touch up scratches, abrasions, voids and other defects in painted surfaces.

PART 1 - GENERAL

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| <u>1.1 References</u> | .1 | American Society for Testing and Materials (ASTM International)
.1 ASTM F 2034, Specification for Linoleum Sheet Flooring. |
| | .2 | Canadian Standards Association (CSA International)
.1 CAN/CSA-ISO 14040-97, Environmental Management - Life Cycle Assessment - Principles and Framework (Adopted ISO 14040:1997, first edition). |
| <u>1.2 Samples</u> | .1 | Submit samples in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Submit duplicate 300 x 300 mm sample pieces of sheet material. |
| | .3 | Submit product and maintenance data for sealing and waxing sheet vinyl flooring. |
| <u>1.3 Closeout Submittals</u> | .1 | Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals. |

PART 2 - PRODUCTS

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| <u>2.1 Materials</u> | .1 | Resilient Sheet Vinyl Flooring Materials:
.1 Provide Armstrong inlaid sheet (Connection CORLON) with backing. Colour: otter grey 88717, 72 in (1.83 m) wide, having a nominal total thickness of 0.080 in (2.00 mm) to the requirements of ASTM F 1303, Type II, Grade 1, Class A Backing. |
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|---------------------------|----|---|
| 2.1 Materials
(Cont'd) | .1 | (Cont'd) |
| | .2 | Provide Solid Colour Vinyl Weld Rod produced by flooring manufacturer, and intended for heat welding of seams. Colour shall be compatible with field colour of flooring. Colour selected from the Manufacturer's Standard Colour Range. |
| | .2 | Resilient Base: |
| | .1 | Rubber, coved, minimum 1200 mm length and 100mm high, colour black. |
| | .2 | Preformed outside corner pieces to coordinate with coved rubber base, colour black. |
| | .3 | Adhesives: |
| | .1 | As recommended by manufacturer. |
| | .4 | Accessories |
| | .1 | For Patching, smoothing, and leveling monolithic subfloors, Provide Fast-setting cement-based patch and skim coat. |
| | .2 | Provide transition/reducing strips tapered to meet abutting materials, if required. |

PART 3 - EXECUTION

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| 3.1 Inspection | .1 | Examine Subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material. |
| 3.2 Preparation | .1 | Smooth concrete surfaces, removing rough areas, projections, ridges and bumps, and filling low spots, control or construction joints, and other defects with S-184 Fast-Setting Cement-based patch and skim coat as recommended by the flooring manufacturer. |

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| 3.2 Preparation
(Cont'd) | .2 | Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. |
| | .3 | Vacuum or broom - clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials. |
| 3.3 Installation of
Sheet Flooring | .1 | Install Flooring in strict accordance with Manufacturer's Instructions. |
| | .2 | Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings. |
| | .3 | If required, install flooring on pan-type floor access covers. Maintain continuity of colour and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers. |
| | .4 | Adhere flooring to the subfloor without cracks, voids, raising and puckering at the seams. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Hand-roll flooring at the perimeter and the seams to assure adhesion. Refer to specific rolling instructions of the flooring manufacturer. |
| | .5 | Lay flooring to provide a minimum number of seams. Avoid cross seams, filler pieces, and strips. Match edges for colour shading and pattern at the seams in compliance with the manufacturer's recommendations. |
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<u>3.3 Installation of Sheet Flooring (Cont'd)</u>	.6	Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.
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	.7	Prepare Heat-welded seams with special routing tool supplied for this purpose and heat weld with vinyl welding rod in seams. Use methods and sequence of work in conformance with written instructions of the flooring manufacturer. Finish all seams flush and free from voids, recesses, and raised areas.
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<u>3.4 Installation of Accessories</u>	.1	Apply metal transition strips as required (after) flooring installation. Secure to the substrate, complying with manufacturer's recommendations.
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<u>3.5 Cleaning</u>	.1	Remove excess adhesive from floor, base and wall surfaces without damage.
	.2	Clean, seal and wax floor and base surface to flooring manufacturer's printed instructions.

<u>3.6 Protection</u>	.1	Protect new floors from time of final set of adhesive until final inspection.
	.2	Prohibit traffic on floor for 48 hours after installation.

PART 1 - GENERAL

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|------------------------------|----|---|
| <u>1.1 REFERENCES</u> | .1 | Master Painters Institute (MPI)
.1 MPI Architectural Painting Specifications Manual. |
| | .2 | The Master Painters Institute (MPI)
.1 Maintenance Repainting Manual 2012, Master Painters Institute (MPI), including Indetifiers, Evaluation, Systems, preparation and Approved Product List. |
| <u>1.2 QUALITY ASSURANCE</u> | .1 | Qualifications: Contractor: minimum of five years proven satisfactory experience. When requested, provide list of last three comparable jobs including, job name and location, specifying authority, and project manager. |
| | .2 | Conform to latest MPI requirements for interior painting work including preparation and priming. |
| | .3 | Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with MPI Painting Specification Manual "Approved Product" listing and shall be from a single manufacturer for each system used. |
| | .4 | Standard of Acceptance:
.1 Walls: No defects visible from a distance of 1000 mm at 90° to surface.
.2 Ceilings: No defects visible from floor at 45° to surface when viewed using final lighting source.
.3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area. |
| <u>1.3 SUBMITTALS</u> | .1 | Submittals in accordance with Section 01 33 00 - Submittal Procedures. |
-

1.3 SUBMITTALS (Cont'd)	.2	Product Data:
	.1	Submit product data and instructions for each paint and coating product to be used.
	.2	Submit product data for the use and application of paint thinner.

1.4 DELIVERY, STORAGE AND HANDLING	.1	Packing, Shipping, Handling and Unloading:
	.1	Pack, ship, handle and unload materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
	.2	Acceptance at Site:
	.1	Identify products and materials with labels indicating:
	.1	Manufacturer's name and address.
	.2	Type of paint or coating.
	.3	Compliance with applicable standard.
	.4	Colour number in accordance with established colour schedule.
	.3	Remove damaged, opened and rejected materials from site.
	.4	Storage and Protection:
	.1	Store materials and supplies away from heat generating devices.
	.2	Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
	.5	Store temperature sensitive products above minimum temperature as recommended by manufacturer.
	.6	Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.

1.5 SITE CONDITIONS	.1	Heating, Ventilation and Lighting:
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- 1.5 SITE CONDITIONS (Cont'd)
- .1 (Cont'd)
 - .1 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
 - .2 Provide minimum lighting level of 323 Lux on surfaces to be painted.
 - .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Perform painting work when maximum moisture content of the substrate is below:
 - .1 Allow new concrete and masonry to cure minimum of 28 days.
 - .2 15 % for wood.
 - .3 12 % for plaster and gypsum board.
 - .3 Surface and Environmental Conditions:
 - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations.
 - .2 Apply paint when previous coat of paint is dry or adequately cured.
 - .4 Refer to Appendix A Designated Substances Inspection & Appendix B Guideline Lead on Construction Projects.

PART 2 - PRODUCTS

- 2.1 ACCEPTABLE PRODUCTS AND SUPPLIERS
- .1 Sherwin Williams or approved equal.

- 2.2 MATERIALS
- .1 Conform to latest MPI requirements for interior painting work including preparation and priming.
-

2.2 MATERIALS

(Cont'd)

.2

Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.

.3

Provide paint products meeting MPI "Environmentally Friendly" E1, E2 E3 ratings based on VOC (EPA Method 24) content levels.

2.3 COLOURS

.1

Consultant will provide Colours after Contract award.

.2

Colours will be based upon selection of one base colour and one accent colour.

.3

Patch painting shall match existing.

2.4 MIXING AND TINTING

.1

Perform colour tinting operations prior to delivery of paint to site.

.2

Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.5 GLOSS/SHEEN RATINGS

.1

Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 - Matte Finish (flat)	Max. 5	Max. 10
Gloss Level 2 - Velvet-Like Finish	Max.10	10 to 35
Gloss Level 3 - Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 - Satin-Like Finish	20 to 35	min. 35

Gloss Level 5 35 to 70
 - Traditional
 Semi-Gloss
 Finish
 Gloss Level 6 70 to 85
 - Traditional
 Gloss
 Gloss Level 7 More than 85
 - High Gloss
 Finish

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

2.6 INTERIOR

- .1 Existing Concrete block vertical surfaces: walls:
 .1 Step 1: Clean all wall surfaces with eco tsp or simple green.
 .2 Step 2: 1 thin coat of extreme bond (datasheet attached).
 .3 Step 3: 2 coats of high performance acrylic (200hp or precat epoxy).
- .2 INNew concrete block vertical surfaces: walls (over latex block filler) GL4.
- .3 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material".
 .1 RIN 9.2B High performance architectural latex GL4 walls. GL2 bulkheads & ceilings. INT 9.2B high performance architectural latex (over latex primer/sealer) GL4 walls. GL2 bulkheads & ceilings.
- .4 Galvanized metal: frames, misc. steel, pipes, and ducts.
 .1 RIN 5.3J high performance architectural latex GL4. Metal door and frames. INT 5.3M high performance architectural latex (over w.b. galvanized primer) GL4.

PART 3 - EXECUTION

- | | | |
|------------------------|----|---|
| <u>3.1 GENERAL</u> | .1 | Perform preparation and operations for interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise. |
| | .2 | Apply paint materials in accordance with paint manufacturer's written application instructions. |
| <u>3.2 EXAMINATION</u> | .1 | Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Engineer damages, defects, unsatisfactory or unfavourable conditions before proceeding with work. |
| <u>3.3 PREPARATION</u> | .1 | Protection:
.1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Engineer.
.2 Protect items that are permanently attached such as Fire Labels on doors and frames.
.3 Protect factory finished products and equipment. |
| | .2 | Surface Preparation:
.1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
.2 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Engineer. |
-

3.3 PREPARATION
(Cont'd)

- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements and in accordance with MPI Maintenance Repainting Manual. Refer to MPI Manual in regard to specific requirements and as follows:
- .1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 - .2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - .4 Allow surfaces to drain completely and allow to dry thoroughly.
 - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
 - .6 Use trigger operated spray nozzles for water hoses.
 - .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
 - .8 Lightly sand all existing painted surfaces specified to be re-painted.
- .4 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
- .5 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.
- .6 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminants from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required.
-

3.3 PREPARATION
(Cont'd)

- .7 prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between application of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.
- .8 Touch up of shop primers with primer as specified.

3.4 APPLICATION

- .1 Painting of rooms to include but not limited to walls, radiation covers, doors, frames, window and door trim, base boards, unfinished shelving and other materials which are secured to walls.
 - .2 Method of application to be as approved by Engineer. Apply paint by brush or roller . Conform to manufacturer's application instructions unless specified otherwise.
 - .3 Brush and Roller Application:
 - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
 - .2 Work paint into cracks, crevices and corners.
 - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
 - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
 - .5 Remove runs, sags and brush marks from finished work and repaint.
 - .4 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
 - .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
-

- | | | |
|---|-----|---|
| <u>3.4 APPLICATION
(Cont'd)</u> | .6 | Sand and dust between coats to remove visible defects. |
| | .7 | Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges. |
| | .8 | Finish closets and alcoves as specified for adjoining rooms. |
| | .9 | Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces. |
| | .10 | Prime all surfaces and apply 2 finish coats. |
| <u>3.5 MECHANICAL/
ELECTRICAL
EQUIPMENT</u> | .1 | Paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated. |
| | .2 | Do not paint over nameplates. |
| <u>3.6 SITE TOLERANCES</u> | .1 | Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface. |
| | .2 | Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source. |
| | .3 | Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area. |

PART 1 - GENERAL

1.1 REFERENCE
STANDARDS

- .1 ASTM International (ASTM)
 - .1 ASTM A 167-99(2009), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .2 ASTM B 456-03, Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
 - .3 ASTM A 653/A 653M-09, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .4 ASTM A 924/A 924M-09, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.81-M90, Air Drying and Baking Alkyd Primer for Vehicles and Equipment.
 - .2 CAN/CGSB-1.88-92, Gloss Alkyd Enamel, Air Drying and Baking.
 - .3 CGSB 31-GP-107MA-90, Non-inhibited Phosphoric Acid Base Metal Conditioner and Rust Remover.
- .3 CSA Group (CSA)
 - .1 CAN/CSA-B651-04, Accessible Design for the Built Environment.
 - .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

1.2 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:

1.2 ACTION AND INFORMATIONAL SUBMITTALS (Cont'd)	.3	(Cont'd) .1 Submit drawings indicating size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in-frame, building-in details of anchors for grab bars.
1.3 CLOSEOUT SUBMITTALS	.1	Provide maintenance data for toilet and bath accessories for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
1.4 MAINTENANCE MATERIAL SUBMITTALS	.1	Tools: .1 Provide special tools required for assembly, disassembly or removal for toilet and bath accessories in accordance with requirements specified in Section 01 78 00 - Closeout Submittals. .2 Deliver special tools to Consultant.
1.5 DELIVERY, STORAGE AND HANDLING	.1	Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
	.2	Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
	.3	Storage and Handling Requirements: .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area. .2 Store and protect toilet and bathroom accessories from nicks, scratches, and blemishes. .3 Replace defective or damaged materials with new.

1.5 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)

- .4 Packaging Waste Management: in accordance with Section 01 74 19 - Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Sheet steel: to ASTM A 653/A 653M with ZF001 designation zinc coating.
- .2 Stainless steel sheet metal: to ASTM A 167, Type 304.
- .3 Stainless steel tubing: Type 304, commercial grade, seamless welded, 1.2 mm wall thickness.
- .4 Fasteners: concealed screws and bolts hot dip galvanized, exposed fasteners to match face of unit. Expansion shields fibre, lead or rubber as recommended by accessory manufacturer for component and its intended use.

2.2 COMPONENTS

- .1 Toilet paper dispenser (TPD): Supplied by Owner, installed by this Contract.
- .2 Waste receptacle (WSR): Supplied by Owner.
- .3 Paper towel dispenser (PTD): Supplied by Owner, installed by this Contract.
- .4 Soap dispenser (SDP): Supplied by Owner, installed by this Contract.
- .5 Grab bars (GB): 32 mm diameter x 1.6 mm wall tubing of stainless steel, concealed screw attachment, flanges welded to tubular bar, provided with steel back plates and all accessories. Knurl bar at area of hand grips. Grab bar material and anchorage to withstand downward pull of 2.2 kN.
- .1 Sizes as indicated.
- .6 Coat hook (CH): stainless steel with 75 mm projection.

2.2 COMPONENTS (Cont'd)

- .7 Mirror (MR): wall mounted unit concealed hanger, fixed framed mirror 6 mm, stainless steel frame. Size: 1220 mm high and 600 mm wide. Mirror type 3B laminated CAN/CGSB 12.5-M86.
- .8 Shelf (SH): surface mounted, 125 deep, 400 wide, stainless steel.

2.3 FABRICATION

- .1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.
- .2 Wherever possible form exposed surfaces from one sheet of stock, free of joints.
- .3 Brake form sheet metal work with 1.5 mm radius bends.
- .4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- .5 Back paint components where contact is made with building finishes to prevent electrolysis.
- .6 Hot dip galvanize concealed ferrous metal anchors and fastening devices to CAN/CSA-G164.
- .7 Shop assemble components and package complete with anchors and fittings.
- .8 Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates, details and instructions for building in anchors and inserts.
- .9 Provide steel anchor plates and components for installation on studding and building framing.

2.4 FINISHES

- .1 Chrome and nickel plating: to ASTM B 456, satin finish.

<u>2.4 FINISHES</u> (Cont'd)	.2 Baked enamel: condition metal by applying one coat of metal conditioner to CGSB 31-GP-107Ma, apply one coat Type 2 primer to CAN/CGSB-1.81 and bake, apply two coats Type 2 enamel to CAN/CGSB-1.88 and bake to hard, durable finish. Sand between final coats. Colour selected from standard range by Consultant.
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.3	Manufacturer's or brand names on face of units not acceptable.
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PART 3 - EXECUTION

<u>3.1 EXAMINATION</u>	.1 Verification of Conditions: verify that conditions of substrates and surfaces to receive toilet and bathroom accessories previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's instructions prior to toilet and bathroom accessories installation.
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.2	Inform Consultant of unacceptable conditions immediately upon discovery.
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.3	Proceed with installation only after unacceptable conditions have been remedied.
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<u>3.2 INSTALLATION</u>	.1 Install and secure accessories rigidly in place as follows: <table> <tr> <td style="vertical-align: top;"> .1 </td> <td> Stud walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs. </td> </tr> <tr> <td style="vertical-align: top;"> .2 </td> <td> Hollow masonry units, existing plaster or drywall: use toggle bolts drilled into cell or wall cavity. </td> </tr> <tr> <td style="vertical-align: top;"> .3 </td> <td> Solid masonry, marble, stone or concrete: use bolt with lead expansion sleeve set into drilled hole. </td> </tr> <tr> <td style="vertical-align: top;"> .4 </td> <td> Toilet and shower compartments: use male to female through bolts. </td> </tr> </table>	.1	Stud walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.	.2	Hollow masonry units, existing plaster or drywall: use toggle bolts drilled into cell or wall cavity.	.3	Solid masonry, marble, stone or concrete: use bolt with lead expansion sleeve set into drilled hole.	.4	Toilet and shower compartments: use male to female through bolts.
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.3	Solid masonry, marble, stone or concrete: use bolt with lead expansion sleeve set into drilled hole.								
.4	Toilet and shower compartments: use male to female through bolts.								

.2	Install grab bars on built-in anchors provided by bar manufacturer.
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- | | | |
|-------------------------------------|----|--|
| <u>3.2 INSTALLATION</u>
(Cont'd) | .3 | Use tamper proof screws/bolts for fasteners. |
| | .4 | Fill units with necessary supplies shortly before final acceptance of building. |
| | .5 | Install mirrors in accordance with Section 08 80 00 - Glazing. |
| <u>3.3 ADJUSTING</u> | .1 | Adjust toilet and bathroom accessories components and systems for correct function and operation in accordance with manufacturer's written instructions. |
| | .2 | Lubricate moving parts to operate smoothly and fit accurately. |
| <u>3.4 CLEANING</u> | .1 | Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
.1 Leave Work area clean at end of each day. |
| | .2 | Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning. |
| | .3 | Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility. |
| <u>3.5 PROTECTION</u> | .1 | Protect installed products and components from damage during construction. |
| | .2 | Repair damage to adjacent materials caused by toilet and bathroom accessories installation. |
| <u>3.6 SCHEDULE</u> | .1 | Locate accessories where indicated on drawings. Exact locations determined by Consultant. |
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3.6 SCHEDULE (Cont'd)	.2	Install Owner supplied components where indicated on drawings. Exact locations determined by Consultant.
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Appendix A

The enclosed Annual Asbestos Containing Materials Inspection and Designated Substances Inspection is part of this scope of work, prepared by the Owner's separate consultant.

During construction, notify the Owner's Representative immediately for clarification if the contractor has any questions regarding the presence of hazardous materials.

PROJECT NO. 9961.14

REPORT TO

**ALGONQUIN & LAKESHORE CATHOLIC
DISTRICT SCHOOL BOARD**

ON

**2021 ANNUAL ASBESTOS CONTAINING
MATERIALS INSPECTION AND
DESIGNATED SUBSTANCES INSPECTION**

**HOLY CROSS CATHOLIC SECONDARY
SCHOOL**

**1085 WOODBINE
KINGSTON, ONTARIO**

CONDUCTED BY:



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OCTOBER 15, 2021

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1.0 INTRODUCTION

S2S Environmental Inc. (S2S) was retained by the Algonquin & Lakeshore Catholic District School Board (ALCDSB) to conduct the 2021 Annual Asbestos Containing Materials (ACMs) and Designated Substances Inspection (Annual Inspection) within Holy Cross Catholic Secondary School located at 1085 Woodbine Road in Kingston, Ontario (Subject Building). The 2021 Annual Inspection site visit was completed by Mr. Nico Vujic of S2S on August 18, 2021.

The Annual Inspection included a visual examination and evaluation of the presence and condition of substances designated under the Occupational Health and Safety Act (OHSA) (R.S.O. 1990) previously identified within the Subject Building. These substances include: acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica and vinyl chloride. In addition to these substances, S2S also surveyed for visible suspect mould growth.

At the time of the site visit, the Subject Building was occupied by a two-storey school building with a partial basement. The Subject Building was reportedly constructed in approximately 1989, with an addition built in 1998. The Subject Building reportedly had a total floor area of approximately 8,530 m² (91,812 ft²). The interior finishes of the Subject Building generally consisted of drywall and concrete block walls; drywall and lay-in acoustic tiled ceilings; and vinyl tile and sheet flooring, ceramic tiles and concrete flooring.

The building was not occupied by regular ALCDSB staff and students at the time of the inspection.

2.0 SCOPE OF WORK

The Annual Inspection carried out by S2S was based on the ALCDSB's Inspection Requirements, and consisted of the following:

1. Records Review, including previous reports;
2. Site visit including interviews and a non-destructive visual inspection of the condition of previously identified ACMs and other designated substances or hazardous materials;
3. Photography of previously/newly identified, presumed/suspect or damaged ACMs and other hazardous materials; and
4. Evaluation of information and preparation of a report.

2.1 Records Review

As part of the ACM inspection, S2S reviewed the following reports:

- “Asbestos Containing Materials Survey, Holy Cross Catholic Secondary School, 1085 Woodbine Road, Kingston, Ontario” report, prepared for ALCDSB by DCS, dated August 13, 2011;



- “*Limited Designated Substances Survey, Holy Cross Catholic Secondary School, 1085 Woodbine Road, Kingston, Ontario*”, prepared for ALCDSB by S2S, dated February 6, 2017;
- “*2017 Annual Asbestos Containing Materials Inspection, Holy Cross Catholic Secondary School, 1085 Woodbine Road, Kingston, Ontario*”, prepared for ALCDSB by S2S, dated October 24, 2017; and
- “*2018 Annual Asbestos Containing Materials Inspection, Holy Cross Catholic Secondary School, 1085 Woodbine Road, Kingston, Ontario*”, prepared for ALCDSB by S2S, dated October 3, 2018;
- “*2019 Annual Asbestos Containing Materials Inspection, Holy Cross Catholic Secondary School, 1085 Woodbine Road, Kingston, Ontario*”, prepared for ALCDSB by S2S, dated September 27, 2019; and
- “*2020 Annual Asbestos Containing Materials Inspection, Holy Cross Catholic Secondary School, 1085 Woodbine Road, Kingston, Ontario*” prepared for ALCDSB by S2S, dated October 7, 2020.

As noted in the above reports, materials were previously identified/suspected to be asbestos containing. The past sampling results and findings are assumed to be accurate and have been incorporated into this report where applicable.

As a result of incomplete/partial information provided by the Board, the findings of this report should not be construed as a complete representation of all previously identified asbestos containing materials within the School Building. As such, the findings of this report should be discussed with the Board prior to any scheduled construction, renovation or demolition projects within the School.

The asbestos containing materials summary form is provided in Appendix A. The lead containing materials summary is provided in Appendix B. Site plans showing the approximate locations of ACMs are provided in Appendix C as Drawing Nos. 1 to 2. Selected photographs are included in Appendix D. The laboratory certificates of analysis for the submitted bulk samples are included in Appendix E.

3.0 REGULATORY REQUIREMENTS

3.1 Designated Substances

The Ontario Ministry of Labour (MOL) has issued specific regulations under OHSA for a number of substances known to be harmful to human health. As of July 1, 2010, the majority of the regulations controlling the exposure limits, waste management and transfer of designated substances were consolidated into one regulation, OHSA Ontario Regulation (O. Reg.) 490/09 (as amended by O. Reg. 148/12). The regulation does not apply to construction projects.

The disturbance of asbestos materials during project work is controlled by the MOL Regulation, O. Reg. 278/05 – Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations (as amended by O. Reg. 479/10). The regulation classifies



all disturbances as Type 1, Type 2, or Type 3, each of which has defined work practices. All asbestos-containing materials (if they are to be disturbed) are subject to special handling and disposal requirements, and must be removed before partial or full demolition. The MOL must be notified in writing of any project involving the removal of more than a minor amount of friable asbestos material.

The disturbance of lead containing materials during project work is controlled by the MOL Guideline: Lead on Construction Projects, issued by the Occupational Health and Safety Branch of the Ontario MOL, published in September 2004 and revised in April 2011. This guideline provides classifications for types of lead disturbance activities, and assigns different levels of respiratory protection and work procedures for anticipated worker exposure to airborne lead. The concentration of total lead present in a surface coating material is regulated by the federal Surface Coating Materials Regulation (SOR/2005-109) made under the Canada Consumer Product Safety Act. This regulation limits total lead levels in new surface coating materials and products with surface coatings applied to them to 90 mg/kg (or 0.009% by weight). Despite this threshold limit, the level of airborne lead expected to be present in a work area is dependent on the likelihood of producing airborne lead dust or fumes (i.e. hand scraping, sanding, welding, torch cutting, and sandblasting) and is not related to the percentage of lead within the coating. Therefore, for the purpose of this survey, paints with detectable lead concentrations should be considered to be lead containing.

The disturbance of silica containing materials (i.e. concrete, cinder block, drywall ceiling tiles, mortar and any other aggregates used throughout the visibly accessible areas of the Subject Building) should completed following procedures outlined by the MOL Guideline: Silica on Construction Projects, issued by the Occupational Health and Safety Branch of the Ontario MOL, published in September 2004 and revised in April 2011, when carrying out work that will create airborne silica dust.

The disposal of common mercury wastes (i.e. thermostats or fluorescent light tubes) is controlled by the Ministry of the Environment, Conservation and Parks (MECP) Regulation, O. Reg. 347, R.R.O. 1990 (as amended by O. Reg. 334/13).

3.2 Mould and Water Damage

Procedures for the remediation of mould are outlined by the Environmental Abatement Council of Canada (EACC) “*Mould Abatement Guidelines*” Edition 3, (2015) and the Canadian Construction Association’s (CCA) “*Mould Guidelines for the Canadian Construction Industry*,” dated 2018.

4.0 METHODOLOGY

4.1 Site Visit

The Subject Building was examined to verify the location, quantity and condition of designated substances previously identified. S2S was reliant on the ALCDSB to provide access to locked



or limited-access areas of the Subject Building on the date of the site visit. All areas of the Subject Building with previously identified ACMs were accessible at the time of the 2021 Annual Inspection.

Any changes to location, quantity and condition of previously identified ACMs observed during the current Annual Inspection were recorded on the 2021 Annual ACMs Inspection Summary Table (Appendix A) and the Site Drawings (Appendix C). Any changes to location, quantity, and condition of previously identified lead containing materials observed during the current Annual Inspection were recorded on the 2021 Annual Lead Containing Materials Inspection Summary Table (Appendix B). Selected photographs from the 2021 Annual Inspection are attached in Appendix D.

The presence or absence of the following designated substances or hazardous materials: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, mercury, silica, and vinyl chloride was inferred based on the historical building usage (reportedly a purpose-built school) and site observations. Further, no confirmatory sampling for these designated substances or hazardous materials and mould growth (if observed) was conducted.

If performed to supplement previous survey findings, representative samples of suspect ACMs or suspect lead containing paints were identified based on determining the age and renovation time periods of the Subject Building and associated components. In general, samples of suspect ACMs were collected from selected building materials in quantities corresponding to the requirements stipulated in O. Reg. 278/05, which states a minimum number of samples are to be obtained and analyzed (3, 5, or 7 depending on quantity, application and friability) from each area of homogeneous material for the material to be considered non-asbestos containing. If performed, suspect samples of lead containing paint were collected from representative areas of distinctive painted walls and interior/exterior finishes if more than a very limited application was present.

4.2 ACMs Inspection Exclusion

The materials listed below are generally excluded during an assessment due to the potential for irreparable damage to the building components from sampling and due to accessibility issues. The presence of asbestos is presumed in the materials noted below.

- components or wiring within motors or lights;
- high voltage wiring;
- mechanical packing, ropes and gaskets;
- exterior cladding, soffit and fascia boards on building;
- fire-door cores;
- vermiculite above solid ceilings, inside masonry or other wall assemblies;
- underground services or piping;
- concrete levelling compound (for floors);
- refractory brick in boilers or incinerators; and
- dust in ductwork.



4.3 Evaluation Criteria for Designated Substances and Hazardous Materials

The condition of identified and presumed designated substances and hazardous materials as well as the potential of disturbance was evaluated. These evaluations were based on the conclusions of published studies, existing Ontario regulations, and S2S's past experiences.

Examples of damaged ACMs include, but are not limited to delamination of sprayed material, mechanical insulation with damaged/missing insulation or jacketing, exposed under-pad on vinyl sheet flooring, or a non-friable material that has been pulverized which causes it to become friable. The precedence for remedial action is based not solely on the evaluation of condition but is also based on several other factors which include:

- Accessibility or potential for direct contact and disturbance which can cause the release of designated substances or hazardous materials into the air;
- Practicality of repair (e.g. if damage to the materials will continue even if they are repaired); and
- Efficiency of the work (e.g. if damaged ACMs are being removed in a given area, it may be most practical to remove all ACMs in the area even if they are in good condition).

For the purposes of this assessment, Good, Fair and Poor were utilized to describe the condition of the known or suspect ACMs and other designated substances or hazardous materials identified in the Subject Building.

Known ACMs are further classified into two categories based on their friability properties. Friable material is material that (a) when dry, can be crumbled, pulverized or powdered by hand pressure, or (b) is crumbled, pulverized or powdered. ACMs that are friable have a much greater potential than non-friable ACMs to release airborne asbestos fibres when disturbed. Typical friable ACMs include surfacing materials (e.g. sprayed fireproofing, texture, decorative or acoustic plaster) and thermal insulations (e.g. pargeing cement) on mechanical systems. Asbestos-containing manufactured materials include vinyl floor tiles, ceiling tiles, gasket materials, asbestos cement pipe or board, and asbestos textiles. Depending on the formulation, these materials may be friable or non-friable. Note that though a product may be considered non-friable when new, if the product releases fine dust due to deterioration or during removal, the free dust is considered friable. For example, lay-in acoustic ceiling tiles or plaster may release significant dust at the time of removal, and therefore are considered friable.

S2S utilizes each of the above noted hazard ratings (i.e. condition, accessibility and friability) during our site assessments to determine the risk level of exposure.

A summary of asbestos containing materials identified within the Subject Building is included



in Appendix A. Site drawings showing the approximate locations of ACMs are provided in Appendix C as Drawing Nos. 1 and 2. Selected photographs showing confirmed designated substances or hazardous materials are included in Appendix D.

4.4 Bulk Sampling

A total of 10 representative suspect lead containing paint samples were submitted to Scientific Analytical Institute (SAI) in Greensboro, North Carolina for analysis of lead concentration by Inductively Coupled Plasma Atomic Emission Spectrometry EPA SW-846 3rd Ed. Method No. 6010C respectively.

Site drawings outlining approximate locations of suspect building materials sampled are included in Appendix C, and selected photographs of materials submitted for laboratory analysis are included in Appendix D. The Laboratory Certificate of Analysis is included in Appendix E.

5.0 FINDINGS

5.1 ACMs Abatements Since Last Inspection

No ACM abatements were completed since the last inspection to the time of the site visit.

5.2 Designated Substances Survey

Designated Substances and hazardous materials identified by visual observation during the Annual Inspection are outlined below:

Table 1: Designated Substances and Hazardous Materials Identified

Hazardous Material	Findings
Asbestos	The previously identified ACMs observed during the site visit were similar in quantity and condition when compared to the most recent previous annual report (listed in Section 2.1). Although not observed during the current inspection, additional ACMs may be present in visually inaccessible areas of the Subject Building. Refer to Appendix A for the S2S Annual ACMs Inspection Summary Table and reports in Section 2.1 for the previous asbestos bulk sample locations and results.
Lead	The previously identified lead containing paints observed during the current site visit were similar in quantity and condition when compared to the most recent previous report (listed in Section 2.1) with the exception of the following quantities of paints noted to be in fair condition: <ul style="list-style-type: none">• Approximately 1 ft² of peeling white paint on the concrete block walls in Room 105;



Hazardous Material	Findings
	<ul style="list-style-type: none"> • Approximately 1 ft² of peeling peach paint on the concrete block walls in Room 213; • Approximately 1 ft² of peeling white paint on the drywall wall in Room 220; and • Approximately 2 ft² of peeling peach paint on the concrete block walls in Rooms W117 and C101. <p>Paints with similar texture and appearance that are present in other areas of the Subject Building should be presumed to contain similar concentrations of lead.</p> <p>Lead may also be present in paints not sampled, electronic components (e.g., wiring connections, wire bundles, etc.), plumbing solder, roof flashing, noise baffles, emergency lighting batteries, and cast-iron piping gaskets (i.e., bell & spigots). Where present within the Subject Building, they are presumed to be lead-containing. Refer to Appendix B for the S2S Annual Lead Containing Materials Inspection Summary Table and reports in Section 2.1 for the previous lead paint bulk sampling locations and results.</p>
Mercury	<p>Mercury in the form of vapour may be present within fluorescent light tubes observed throughout the Subject Building. At the time of the Annual Inspection site visit, all visually observed fluorescent light tubes were noted to be intact.</p>
Silica	<p>Suspect crystalline silica-containing materials were observed throughout the Subject Building to be in good condition and include the following: ceiling tiles, drywall walls/ceilings, and concrete in block and brick wall finishes.</p>
Suspect Mould/Water Damage or Staining	<p>No visual evidence of suspect mould growth was observed on visually accessible building finishes within the Subject Building. However, apparent water staining was identified on one acoustic ceiling tile in Room 117, three acoustic ceiling tiles in Room A123, two acoustic ceiling tiles in Room C202, one acoustic ceiling tile in Hallway 1.4, one acoustic ceiling tile in Hallway 1.7, three acoustic ceiling tiles in Hallway 2.7, and on the drywall ceiling (approximately 6 ft²) in Vestibule 1.2. The source(s) of the apparent water staining could not be determined at the time of the site visit.</p>
Other Designated Substances or Hazardous Materials	<p>No other designated substances or hazardous materials were observed or are suspected to be present within the Subject Building.</p>



6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Annual Inspection, S2S concluded the following:

- 1) The previously identified ACMs observed during the site visit were similar in quantity and condition when compared to the most recent previous annual report (listed in Section 2.1). Although not observed during the inspection, additional ACMs may be present in visually inaccessible areas of the Subject Building. Refer to Appendix A for the S2S Annual ACMs Inspection Summary Table.

Based on the completion of the Annual Inspection of ACMs and the findings presented herein, the ACMs identified in the Subject Building are currently in compliance with the requirements of O. Reg. 278/05. Any disturbance or removal of confirmed/presumed ACMs should be conducted following procedures outlined in O. Reg. 278/05.

- 2) Based on visual observations during the Annual Inspection, the previously identified lead containing paints observed were similar in quantity and condition when compared to the most recent previous report (listed in Section 2.1) with the exception of the paints noted to be in fair condition listed above in Table 1. It is recommended that paints observed to be in fair condition be removed or re-painted/stabilized according to applicable abatement procedures. Paints with similar texture and appearance that are present in other areas of the Subject Building should be presumed to contain similar concentrations of lead. Lead may also be present in electronic components (e.g., wiring connections, wire bundles, etc.), plumbing solder, batteries, and cast-iron piping gaskets (i.e., bell & spigots) and paints not sampled. Where present within the Subject Building, S2S presumes that they are lead-containing.

Appropriate worker protection (i.e. respiratory protection), as outlined in “Guideline: Lead on Construction Projects”, published in September 2004 and revised in April 2011 by the Occupational Health and Safety branch of the Ontario MOL, should be employed when conducting demolition or renovation work that will create lead dust.

- 3) Mercury in the form of vapour may be present within the fluorescent light tubes observed throughout the Subject Building. At the time of the site visit, all visually observed fluorescent light tubes, where accessible, were noted to be intact. Liquid mercury is also suspected to be present within the wall mounted thermostat controls or thermometers observed within the Subject Building. It is recommended that disposal of out-of-service fluorescent light tubes, or any other mercury containing materials or equipment be completed in accordance with O. Reg. 490/09 and O. Reg. 347.
- 4) Suspect silica-containing materials were observed throughout the Subject Building. Free crystalline silica has been linked to respiratory illnesses when inhalation of silica dust occurs. At the time of the site visit, suspect silica containing materials were observed to be in good condition. Conditions for silica to become airborne (i.e. due to



extensive damage or crushing/grinding of building materials) during regular activities within the Subject Building were not observed. Suspect silica containing materials are to be managed in place or removed following appropriate dust control measures and worker precautions (i.e. respiratory protection), as outlined in the Ontario MOL “Guideline – Silica on Construction Projects”, April 2011, when conducting demolition or renovation work that will create silica dust.

- 5) No visual evidence of suspect mould growth was observed; however, apparent water staining was identified within the Subject Building (as noted in Table 1). S2S recommends that apparent water-stained acoustic ceiling tiles and drywall ceiling be removed by trained maintenance staff and that the source(s) of all apparent water staining be investigated and repaired prior to the development of mould growth.

It is recommended that the appropriate precautions and/or worker protection be used when dealing with any of the identified/presumed designated substances and other hazardous materials.

7.0 CLOSURE

This report has been prepared for the sole benefit of the Algonquin & Lakeshore Catholic District School Board (ALCDSB). The report may not be relied upon by any other person or entity without the express written consent of S2S Environmental Inc. (S2S) and the ALCDSB. S2S disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Any use that a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such parties. S2S accepts no responsibility for damages, if any, suffered by any party as a result of decisions made or actions based on this report.

Some of the information presented in this report was provided through existing documents and interviews. For this Annual Inspection, the information provided in reports available to S2S was not verified.

S2S has not evaluated health risks associated with building occupant exposure to hazardous materials (i.e. designated substances, mould) which may be identified in this report. Evaluation of health risks on an individual should only be made by a licensed medical practitioner who has knowledge of the individual’s medical history.

Mould is a naturally occurring organism and regardless of the findings of an assessment or effectiveness of a remediation, it could occur/reoccur when conditions are favourable. Therefore, buildings and surfaces should be maintained to prevent conditions that are favourable for mould growth. The scope of services did not include a detailed evaluation of the thermal and moisture characteristics of the exterior wall assembly, or a detailed building envelope investigation to assess all potential cause of the water infiltration that created an environment favourable to mould proliferation.



All standards, regulations and guidelines referenced in this report are subject to change with time and may no longer be applicable at a later date.

S2S makes no other representation whatsoever, including those concerning the legal significance of its findings, or as to the other legal matters addressed incidentally in this report, including but not limited to the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time, thus ALCDSB should review such issues with appropriate legal counsel. The designated substance locations and conclusions provided are based on information obtained from visual inspection and limited sampling carried out, at the specific test locations, and information obtained from building management personnel. The results can only be extrapolated to an undefined area around the test locations. It is possible that additional, concealed designated substances may become evident during demolition/renovation activities.

The quantities provided in this report are order-of-magnitude values and are not considered exact quantities. Contractors are not to use these quantities for providing quotations and will need to inspect the areas to verify the quantity of materials and site conditions that may affect the cost of any abatement work (if required).

The conclusions as presented represent the best judgment of the inspector based on the visual observations of the accessible property elements of the site observed on August 18, 2021.

Respectfully submitted,

S2S ENVIRONMENTAL INC.



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APPENDIX A

2021 ANNUAL ASBESTOS INSPECTION SUMMARY TABLE



2021 Annual Asbestos Inspection Summary Table
Holy Cross Catholic Secondary School – 1085 Woodbine Road, Kingston, Ontario

Date	Consultant	Room #	Specific Location	Material	Quantity (units)	Friable/ Non-Friable	% and Type of ACM	Condition	Recommended Action/Comments
June 10, 2020	S2S	105	Mechanical (Below Ceiling)	Cement Pipe	Not Estimated	Non-Friable	Presumed	Good	Manage in place.
		107	Mechanical (Below Ceiling)	Cement Pipe	Not Estimated	Non-Friable	Presumed	Good	Manage in place.
				Medium Pipe Fitting Insulation	5 fittings	Friable	Presumed	Good	Manage in place.
		218	Inside Fume Hood	Cement Board	30 ft ²	Non-Friable	Presumed	Good	Manage in place.
		230	Inside Fume Hood	Cement Board	30 ft ²	Non-Friable	Presumed	Good	Manage in place.
		A211	Inside Fume Hood	Cement Board	30 ft ²	Non-Friable	Presumed	Good	Manage in place.
		C101	Mechanical (Below Ceiling)	Medium Pipe Fitting Insulation	5 fittings	Friable	Presumed	Good	Manage in place.

Consultant Signature:

Nico Vujić

Date:

August 18, 2021



APPENDIX B

2021 ANNUAL LEAD CONTAINING MATERIALS INSPECTION SUMMARY TABLE



2021 Annual Lead Containing Materials Inspection Summary Table
Holy Cross Catholic Secondary School – 1085 Woodbine Road, Kingston, Ontario

Material	Lead Content by Dry Weight (%)	Condition	Recommended Action/Comments
White Paint	0.0084%	Good	Manage in Place
		Fair	Approx. 1 ft ² on the wall in Room 220. Monitor in place for further degradation or re-paint/stabilize according to applicable abatement procedures
Grey Paint	0.0042%	Good	Manage in Place
Peach Paint	0.0051%	Good	Manage in Place
		Fair	Approx. 3 ft ² on the walls in Rooms 213, W117 and C101. Monitor in place for further degradation or re-paint/stabilize according to applicable abatement procedures
Red Paint	0.012%	N/A	Not observed during the 2021 assessment
Grey Paint	0.019%	N/A	Not observed during the 2021 assessment

Consultant Signatures:

Nico Vuje

Date:

August 18, 2021



APPENDIX C

SITE DRAWINGS



LEGEND:

☒ LEAD BULK SAMPLE

ASBESTOS CONTAINING MATERIALS:

CP CEMENT PIPE

PF PIPE FITTING

NOTE:

ALL HAZARDOUS MATERIALS MAY NOT BE DEPICTED ON THE DRAWING.
REFER TO THE CORRESPONDING REPORT FOR ADDITIONAL INFORMATION.

LEGEND ITEMS ARE DEPENDENT ON COLOR, PRINTING IN GREY-SCALE MAY CHANGE DRAWING INTERPRETATION
BASE DRAWING PROVIDED BY CLIENT.

DESIGNATED SUBSTANCES SURVEY

SITE LOCATION:

1085 WOODBINE ROAD
KINGSTON, ONTARIO

FLOOR/AREA:

MAIN FLOOR

DATE:

OCT 20, 2021

PROJECT #:

9961.14

DRAWN BY:

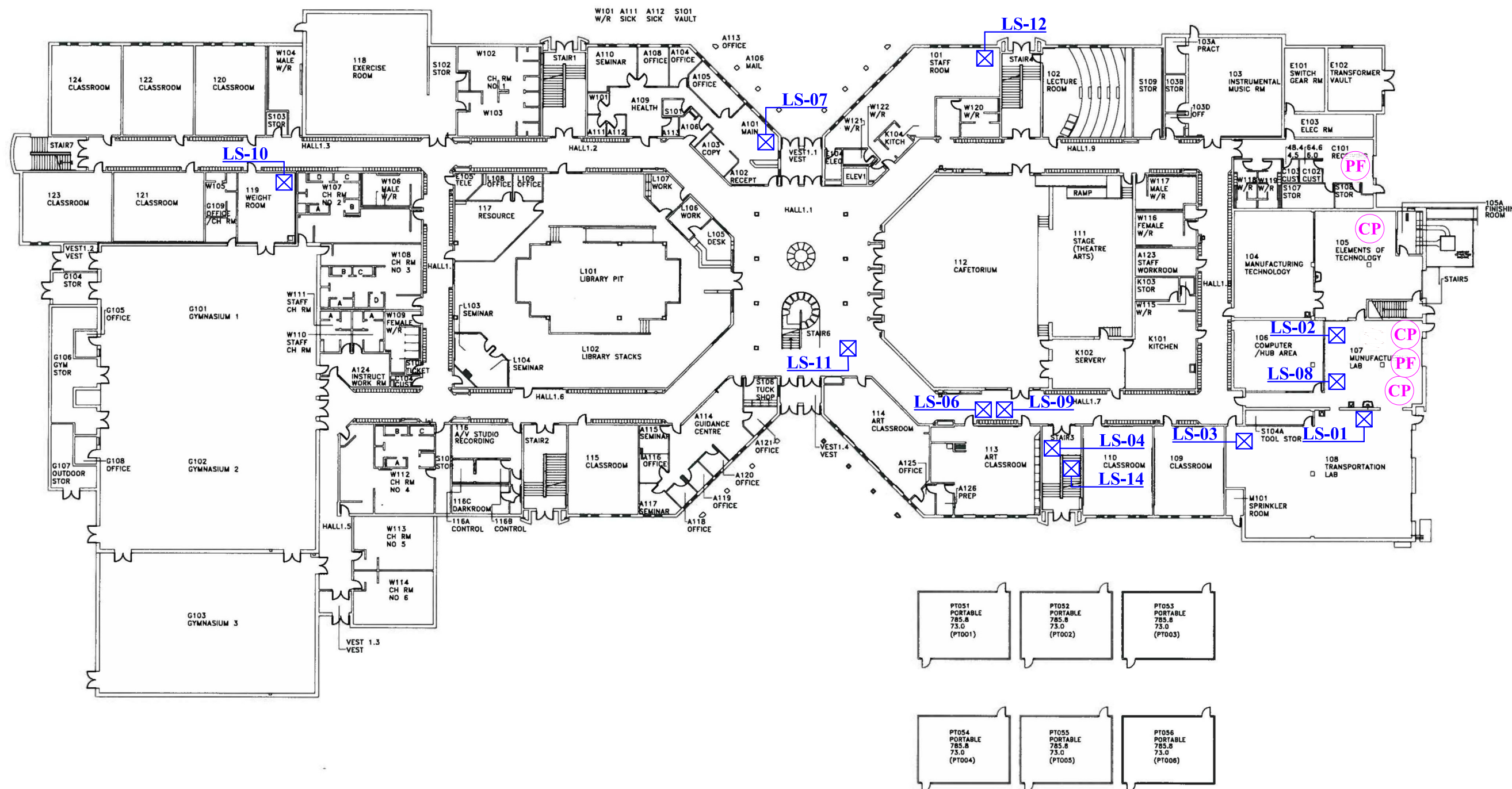
BG

DRAWING #:

1

SCALE:

NOT TO SCALE



LEGEND:

☒ LEAD BULK SAMPLE

ASBESTOS CONTAINING MATERIALS:

Ⓢ CEMENT BOARD

NOTE:

ALL HAZARDOUS MATERIALS MAY NOT BE DEPICTED ON THE DRAWING.
REFER TO THE CORRESPONDING REPORT FOR ADDITIONAL INFORMATION.

LEGEND ITEMS ARE DEPENDENT ON COLOR, PRINTING IN GREY-SCALE MAY CHANGE DRAWING INTERPRETATION
BASE DRAWING PROVIDED BY CLIENT.

DESIGNATED SUBSTANCES SURVEY

SITE LOCATION:

1085 WOODBINE ROAD
KINGSTON, ONTARIO

FLOOR/AREA:

SECOND FLOOR

DATE:
OCT 20, 2021

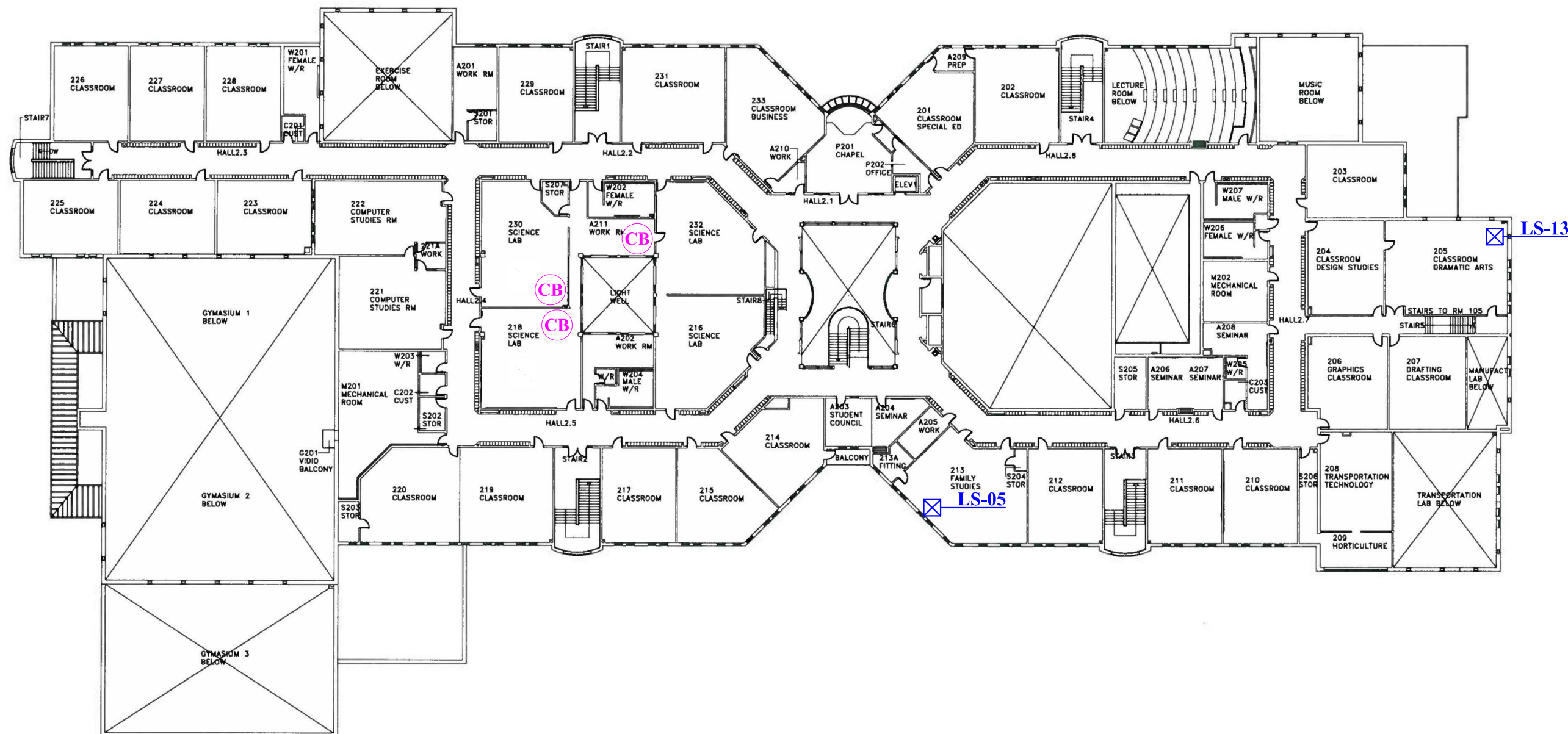
PROJECT #:
9961.14

DRAWN BY:
BG

DRAWING #:

SCALE:
NOT TO SCALE

2



APPENDIX D

SELECTED PHOTOGRAPHS





Photo 1: View of the presumed asbestos containing medium pipe fitting insulation (see arrow) observed to be in good condition below the ceiling assembly in Room C101.



Photo 2: View of the presumed asbestos containing cement board (see arrow) observed to be in good condition in the fume hood in Room 230.



Photo 3: View of the presumed asbestos containing medium pipe fitting insulation (see arrow) observed to be in good condition below the ceiling assembly within Room 107.



Photo 4: View of fair condition lead containing peach paint (see arrow) observed on the concrete block walls in Room 213.

APPENDIX E

LABORATORY CERTIFICATE OF ANALYSIS





Analysis for Lead Concentration in Paint Chips

by Flame Atomic Absorption Spectroscopy
EPA SW-846 3050B/6010C/7000B



Customer: S2S Environmental Inc.
1099 Kingston Road Suite 260
Pickering, Ontario L1V 1B5

Attn: Nico Vujic
Jack Glassco

Lab Order ID: 71973359
Analysis ID: 71973359_PBP
Date Received: 8/26/2021
Date Reported: 9/2/2021
Date Amended: 10/20/2021

Project: PN 9961.14_DSS_1085 Woodbine Rd., Kingston, ON

Sample ID	Description	Mass	Concentration	Concentration
Lab Sample ID	Lab Notes	(g)	(ppm)	(% by weight)
LS-01	White Paint/ Concrete Block Wall in 105	0.0588	84	0.0084%
71973359PBP_1				
LS-02	Cream Paint/ Concrete Block Wall in 107	0.0560	< 71	< 0.0071%
71973359PBP_2				
LS-03	Light Blue Paint/ Concrete Block Wall in 105	0.0870	< 46	< 0.0046%
71973359PBP_3				
LS-04	Dark Green Paint/ Metal Door Frame in Stair 3	0.0221	< 72	< 0.0072%
71973359PBP_4				
LS-05	Peach Paint/ Concrete Block Wall in 213	0.0848	51	0.0051%
71973359PBP_5				
LS-06	Salmon Paint/ Concrete Block Wall in Hall 1.7	0.0479	< 33	< 0.0033%
71973359PBP_6				
LS-07	Brown Paint/ Drywall in A101	0.0634	< 63	< 0.0063%
71973359PBP_7				
LS-08	Grey Paint/ Concrete Block Wall in 107	0.0447	42	0.0042%
71973359PBP_8				
LS-09	Light Green-Grey Paint/ Concrete Block Wall in 1.7	0.0960	< 42	< 0.0042%
71973359PBP_9				
LS-10	Turquoise Green Paint/ Concrete Block Wall in 119	0.0416	< 38	< 0.0038%
71973359PBP_10				

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Analytical uncertainty available upon request. The quality control samples run with the samples in this report have passed all EPA required specifications unless otherwise noted. RL: (Report Limit for an undiluted 50ml sample is 4µg Total Pb). Unless indicated, areas and volumes were provided by the customer.

Athena Summa (14)

Analyst

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Laboratory Director



Analysis for Lead Concentration in Paint Chips

by Flame Atomic Absorption Spectroscopy
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Date Received: 8/26/2021
Date Reported: 9/2/2021
Date Amended: 10/20/2021

Project: PN 9961.14_DSS_1085 Woodbine Rd., Kingston, ON

Sample ID	Description	Mass	Concentration	Concentration
Lab Sample ID	Lab Notes	(g)	(ppm)	(% by weight)
LS-11	Dark Green Paint/ Concrete Block Wall in Hall 1.1	0.0653	< 61	< 0.0061%
71973359PBP_11				
LS-12	Baby Blue Paint/ Concrete Block Wall in 109	0.0599	< 67	< 0.0067%
71973359PBP_12				
LS-13	Navy Blue Paint/ Concrete Block Wall in 205	0.0601	< 67	< 0.0067%
71973359PBP_13				
LS-14	Yellow Paint/ Metal Stairs in Stair 3	0.0662	450	0.045%
71973359PBP_14				

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Analytical uncertainty available upon request. The quality control samples run with the samples in this report have passed all EPA required specifications unless otherwise noted. RL: (Report Limit for an undiluted 50ml sample is 4µg Total Pb). Unless indicated, areas and volumes were provided by the customer.

Athena Summa (14)

Analyst

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Laboratory Director

Appendix B

GUIDELINE

**LEAD ON CONSTRUCTION
PROJECTS**

An electronic copy of this publication is available on the Ministry of Labour website at www.labour.gov.on.ca

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GUIDELINE

LEAD ON CONSTRUCTION PROJECTS

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Foreword

This Guideline has been prepared to assist persons, such as employers, construction project owners, constructors, contractors and subcontractors, who have duties under the Occupational Health and Safety (OHSA) and its regulations to protect workers from exposure to lead. It should not be taken to be a statement of the law or what is necessary to comply with the law. A person with legal duties may or may not agree with the Guideline and there is no legal requirement to follow the Guideline. It is for each such person to decide what is necessary to comply with the OHSA and its regulations.

A person who needs assistance in determining what constitutes compliance should consult with his or her legal advisor. Ministry inspectors will assess workplace situations against the relevant provisions of the OHSA and its regulations but they do not enforce the Guideline, although they may refer to it in determining whether the relevant laws have been complied with.

1.0 INTRODUCTION

Scope

Employers have a duty to protect their workers from lead exposure on construction projects. This guideline has been prepared to raise the awareness of employers and workers in the construction industry of the hazards posed by lead in construction and the measures and procedures that should be taken to control those hazards.

For the purpose of this guideline, lead refers to inorganic lead.

Lead in Construction

Lead is a heavy metal that has been in industrial use for thousands of years. It is pale silvery grey when freshly cut but it darkens on exposure to air. It is heavy, malleable, and a poor conductor of electricity. Lead may be used in its pure elemental form or combined chemically with other elements to form lead compounds. Inorganic lead compounds are used in pigments, paints, glasses, plastics and rubber compounds.

Lead can be present on construction projects in two distinct ways:

- It can be found in construction materials, such as paints, coatings, mortar, concrete, solder, and sheet metal.
- It can be present at a construction site in existing structures, building components, and where lead was previously used in a manufacturing process.

Construction activities of particular concern include:

- abrasive blasting of structures coated with lead-based paints
- application or removal of lead-containing paints
- welding, burning, or high temperature cutting of lead-containing coatings or materials
- removal of lead-containing dust using an air mist extraction system
- removal of lead-containing mortars using an electric or pneumatic cutting device.

2.0 LEGAL REQUIREMENTS

Occupational Health and Safety Act (the OHSA)

The OHSA sets out, in very general terms, the duties of employers and others to protect workers from health and safety hazards on the job. These duties include:

- taking all reasonable precautions to protect the health and safety of workers [clause 25(2)(h)]
- ensuring that equipment, materials and protective equipment are maintained in good condition [clause 25(1)(b)]
- providing information, instruction and supervision to protect worker health and safety [clause 25(2)(a)]
- acquainting a worker or a person in authority over a worker with any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent [clause 25(2)(d)].

In addition, section 30 of the OHSA deals with the presence of designated substances on construction projects. Since lead is a designated substance (O. Reg. 490/09), compliance with the OHSA and its Regulations will require some action to be taken where there is a lead hazard on a construction project.

Section 30 requires the owner of a project to determine if lead is present on a project and, if it is, to so inform all potential contractors as part of the bidding process. In a similar way, contractors who receive this information are to pass it onto other contractors and subcontractors who are bidding for work on the project. If the owner or any contractor fails to comply with this requirement, they will be liable for any loss or damages that result from a contractor subsequently discovering that lead is present.

Workplace Hazardous Materials Information System (WHMIS) Regulation, R.R.O. 1990, Reg. 860

The WHMIS Regulation applies to all workplaces covered by the OHSA. Any employer or constructor who uses WHMIS controlled products is required to comply with the WHMIS Regulation (Reg. 860) regarding the requirements for labels, material safety data sheets, and worker education and training.

The Ministry of Labour is responsible for the administration and enforcement of both federal and provincial WHMIS legislation.

Regulation for Construction Projects. O. Reg. 213/91

The Regulation for Construction Projects, O. Reg. 213/91, applies to all construction projects. Although lead is not mentioned specifically, the following sections of the O. Reg. 213/91 would apply to situations where there is the potential for workers to be exposed to lead:

- | | |
|------------|---|
| Clause 14 | (5) A competent person shall perform tests and observations necessary for the detection of hazardous conditions on a project. |
| Section 21 | <p>(1) A worker shall wear such protective clothing and use such personal protective equipment or devices as are necessary to protect the worker against the hazards to which the worker may be exposed.</p> <p>(2) A worker's employer shall require the worker to comply with subsection (1).</p> <p>(3) A worker required to wear personal protective clothing or use personal protective equipment or devices shall be adequately instructed and trained in the care and use of the clothing, equipment or device before wearing or using it.</p> |
| Section 30 | Workers who handle or use...substances likely to endanger their health shall be provided with washing facilities with clean water, soap and individual towels. |
| Section 46 | <p>(1) A project shall be adequately ventilated by natural or mechanical means,</p> <p style="padding-left: 40px;">(a) if a worker may be injured by inhaling a noxious...dust or fume;</p> <p>(2) If it is not practicable to provide natural or mechanical ventilation in the circumstances described in clause (1)(a), respiratory protective equipment suitable for the hazard shall be provided and be used by the workers.</p> |
| Section 59 | If the dissemination of dust is a hazard to a worker, the dust shall be adequately controlled or each worker who may be exposed to the hazard shall be provided with adequate personal protective equipment. |

Regulation for Designated Substances, O. Reg. 490/09

The Ministry's Designated Substance Regulation, O. Reg. 490/09, specifies occupational exposure limits (OELs) for 11 designated substances including lead, and requires assessment and a control program to ensure compliance with these OELs. The OEL for inorganic lead is 0.05 milligrams per cubic metre (mg/m³) of air as an 8-hour daily or 40-hour weekly time-weighted average limit.

Although O. Reg. 490/09 and the OEL for lead do not apply to an employer on a construction project or to their workers at the project, employers still have a responsibility to protect the health of their workers and to comply with the OHSA and other applicable regulations. Section 25(2)(h) of the OHSA requires that employers take "every precaution reasonable in the circumstances for the protection of a worker".

3.0 HEALTH EFFECTS

How lead enters the body – what are the routes of entry?

Two routes of entry are of major concern: inhalation and ingestion. Airborne lead particles in the form of fumes, dusts and mists can be inhaled deeply into the lungs if they are small enough, less than five micrometres (μm), i.e., five one-millionths of a meter. Larger particles are trapped in the upper respiratory tract, cleared from the lungs, and subsequently swallowed. You can also swallow lead dust if it gets in your food or drinks, or if you eat or smoke without washing your hands first.

What happens when lead enters the body – what are the health effects?

Shortly after lead is inhaled or ingested, it can enter the bloodstream and travel to soft tissues (such as the liver, kidneys, lungs, brain, spleen, muscles, and heart). After several weeks, most of the lead moves into your bones and teeth and can be stored there for a long time. Therefore, exposure to small amounts of lead can build up over time, and the more lead you have in your body, the more likely it is that you will experience health problems.

Early signs of lead poisoning include:

- tiredness
- irritability
- muscle and joint pain
- headaches
- stomach aches and cramps.

Harmful effects can follow a high exposure over a short period of time (**acute poisoning**), or long-term exposure to lower doses (**chronic poisoning**). Symptoms of acute lead poisoning include a metallic taste in the mouth and gastrointestinal symptoms such as vomiting, abdominal cramps, constipation, and diarrhea. Symptoms of chronic lead poisoning are more difficult to recognize because they are similar to many common complaints. However, severe chronic poisoning can lead to more characteristic symptoms, such as a blue line on the gums, wrist drop (the inability to hold the hand extended), severe abdominal pain and pallor.

Lead can also cause serious damage to a number of systems in the body. Overexposure to lead can affect:

Blood: Lead can interfere with the body's ability to manufacture hemoglobin, the molecule in red blood cells responsible for carrying oxygen to the tissues. This may lead to anemia.

Kidneys: Kidneys purify blood before it is distributed for use by the rest of the body. However, kidneys are not effective in filtering lead from the bloodstream. In addition, lead can damage the kidneys and reduce its ability to filter waste from the bloodstream.

Gastrointestinal System: Lead poisoning may result in abdominal pain, loss of appetite, vomiting, nausea, constipation or diarrhea.

Nervous System: Lead poisoning can cause peripheral nerve damage that results in muscle weakness. It may also lead to behavioural changes and to impairment of vision and hearing. At very high levels, lead can affect the brain, causing convulsions, coma, and even death.

Reproductive System: Lead may harm the developing fetus because of the shared blood supply between a mother and her fetus. Exposure of pregnant women to excessive lead may result in miscarriages and stillbirths. Overexposure to lead in men can impair sperm production.

Bones and Teeth: Absorbed lead can be deposited and stored in mineralizing tissues (bones and teeth) for a long period of time. Under certain circumstances, the release of stored lead increases and can re-enter the blood and target other systems in the body. The release of stored lead increases during periods of pregnancy, lactation, menopause, physiologic stress, chronic disease, hyperthyroidism, kidney disease, broken bones, and advanced age, and is exacerbated by calcium deficiency.

Although there are many possible symptoms, they should not be relied upon to warn of a lead-exposure problem because some changes take a long time to develop and workers may not notice a change in their health. If workers carry lead-containing dust home on their clothes, footwear, skin or hair, their family can be exposed to lead too. Children in particular are more susceptible to the harmful effects of lead. Even low-level exposures may harm the intellectual development, behaviour, size and hearing of infants. The best approach in preventing lead poisoning is to ensure that proper lead-exposure controls are in place before any health problems are noted.

4.0 CONTROLLING THE LEAD HAZARD

Lead may affect the health of workers if it is in a form that may be inhaled (i.e. airborne particles) or ingested. In order for lead to be a hazard by inhalation, lead particles that are small enough to be inhaled must get into the air. There are three types of particles: dust, fume and mist. Lead dust consists of solid particles created through processes such as blasting, sanding, grinding, and electric or pneumatic cutting. Lead fumes are produced when lead or lead-contaminated materials are heated to temperatures above 500 °C, such as welding, high temperature cutting, and burning operations. The heating causes a vapour to be given off and the vapour condenses into solid fume particles. Mists are made up of liquid droplets suspended in air. The spray application of lead-based paint can generate a high concentration of lead-containing mist.

The strategy for controlling airborne lead hazard can therefore be broken down into three basic approaches:

- prevent lead from getting into the air
- remove lead present in the air
- if present in the air, prevent workers from inhaling it.

To prevent the ingestion of lead, workers should exercise good work and hygiene practices.

To avoid the ingestion, inhalation and unintentional transfer of lead from contaminated areas, it is essential to have the following control methods in place:

- engineering controls
- work practices and hygiene practices
- protective clothing and equipment
- training.

Even with appropriate measures to control lead, some workers may still be affected. For this reason, periodic medical examinations are important for determining if the control measures in place are effective and if workers are suffering from the effects of lead exposure. This is known as medical surveillance (see Appendix 1) and can be considered to be a method for early detection and prevention of lead poisoning.

4.1 Engineering Controls

Workplace parties, which include owners, constructors, contractors, supervisors and workers, involved in construction projects that may expose workers to lead should:

-
- Substitute lead-containing coatings and materials with lead-free coatings and materials (e.g. substitute lead-containing paints with non-lead based paints). This may also apply to those who develop specifications.
 - Select methods and equipment for the removal or installation of lead-containing coatings and materials that will reduce dust generation (e.g. wet methods, such as wet sweeping and shovelling, reduce dust generation and should be used whenever practicable). This may also apply to those who develop the specifications.
 - General mechanical ventilation should be provided to remove contaminated air from the workplace, and filtered air should be provided to replace the exhausted air.
 - Local mechanical ventilation should be provided to remove contaminants at the source. This is the most effective method. Power tools that can generate lead-containing dust should be equipped with effective dust collection systems.

4.2 Work Practices and Hygiene Practices

Work practices and hygiene practices are on-the-job activities that reduce the exposure potential. Lead-containing material can accumulate on the hands, clothing and hair. From there it can be disturbed, re-suspended in air and inhaled or ingested. Workers should therefore be able to wash and shower at the end of each shift. The specific washing and decontamination facilities that should be provided for the most hazardous work are described in Section 6 of this guideline. For all work involving lead exposure, there should be no smoking, eating, drinking or chewing in contaminated areas. Food and beverages should be stored in an uncontaminated area.

An effective housekeeping program requires the regular cleanup removal of lead-containing dust and debris. Surfaces should be kept clean by washing down with water or vacuuming with a vacuum equipped with a high efficiency particulate air (HEPA) filter. Containers of lead-containing waste should be kept tightly covered to prevent dust from becoming airborne. Cleaning with compressed air or dry sweeping should be avoided.

4.3 Protective Clothing and Equipment

Personal protective clothing and equipment should be provided where workers may be exposed to lead. Appropriate personal protective clothing and equipment to prevent skin contamination, include but are not limited to coveralls or full-body work clothing; gloves, hats, and footwear or disposable coverlets; and safety glasses, face shields or goggles. Respirators should be provided to prevent the inhalation of lead where engineering controls and work practices do not control the concentration of lead to below the OEL.

Protective Clothing

The purpose of protective clothing is to prevent skin exposure and the contamination of regular clothing. All clothing and equipment that has been worn in a lead-contaminated area must be

removed at the end of each shift and be decontaminated. Under no circumstances should these be taken home. When handling lead-contaminated clothing avoid shaking, as this can be a significant source of exposure to lead dust. Lead-contaminated clothing and equipment should be placed in sealed impermeable plastic bags with proper labels indicating lead contamination. Washing facilities and procedures must be suitable for handling lead contaminated laundry.

Respirators

Where engineering controls and work practices do not control the concentration of lead to below the OEL, workers should wear respirators. If respirators are used, a respirator program should be implemented. The program should be developed in consultation with the joint health and safety committee or health and safety representative, if there is one, and should include written procedures for the selection, use, care and maintenance of personal respiratory protective equipment. Workers should be instructed and trained on the care and use of personal protective equipment before using it. Some workers may have a medical condition that causes them to have difficulty breathing when wearing a respirator. If such workers have written medical proof of their condition, they should not be required to do work that requires a respirator.

Respirator selection

Where respirators are provided, they should be appropriate in the circumstances for the anticipated concentrations of airborne lead. Respirators should be selected in accordance with the U.S. National Institute for Occupational Safety and Health (NIOSH) assigned protection factors (APF).

Use, Care, and Maintenance of Respirators

The following general use, care, and maintenance procedures should be followed whenever respirators are required:

- respirators should be used and maintained in accordance with the manufacturer's specifications
- storage of respirators should be in a convenient, clean and sanitary location and in a manner that does not subject them to damage or distortion
- respirators assigned for the exclusive use of one worker, should be cleaned, disinfected and inspected after each shift on which they are used
- respirators used by more than one worker, should be cleaned, disinfected and inspected after each use
- any respirator parts that are damaged or that have deteriorated should be replaced before the respirator is used
- please refer to CSA standard Z94.4-02 for additional information of the use and care of respirators.

Ideally respirators should be assigned for the exclusive use of one worker. But before a decision is made for a respirator to be shared by more than one worker, the following factors should be considered:

- the fit of the equipment
- the health and safety risk to the worker that supplying non-exclusive use equipment would cause
- any undue economic hardship to the employer that supplying exclusive use equipment would cause.

Respirators with a tight-fitting face-piece, must be fitted to the worker in such a way that there is an effective seal between the equipment and the worker's face. Each worker must be fitted for each type of respirator to be worn.

4.4 Training

Training is an important component in preventing worker exposure to lead. Control methods, measures and procedures can only be as effective as the workers carrying them out. It is therefore essential for training to cover the following:

- WHMIS training,
- the hazards of lead, including health effects and symptom recognition,
- personal hygiene, respirator requirements, and work measures and procedures, and
- the use, cleaning and disposal of respirators and protective equipment;

Instruction and training should be provided by a competent person. This could be the employer or someone hired by the employer. A competent person is defined under the OHSA as a person who:

- is qualified because of his/her knowledge, training and experience to organize and carry out the work safely;
- is familiar with the provisions of the act and the regulations that apply to the work; and
- has knowledge of any potential health and safety hazards in the workplace.

The health and safety representative or the representative of a joint health and safety committee should be advised about when and where the training and instruction is to be carried out.

4.5 Medical Surveillance

Medical surveillance can be used as a preventive measure. By providing regular medical examinations and biological monitoring (i.e. blood-lead tests) on workers exposed to lead, subsequent adverse health effects can be detected. The examining physician can then alert the

worker, the employer and the joint health and safety committee to exposure problems in the workplace that might otherwise go unrecognized

Workers working with lead on a regular basis should have pre-placement medical examinations that include blood-lead tests, followed by periodic medical examinations. Blood-lead tests should be taken every six months, or more frequently at the discretion of a physician. Additional information of the medical surveillance program for lead exposed workers can be found in Appendix 1.

5.0 CLASSIFICATION OF WORK

A key feature of this guideline is the classification of work. It is the classification of the work that determines the appropriate respirators, measures and procedures that should be followed to protect the worker from lead exposure. In this guideline, lead-containing construction operations are classified into three groups, Type 1, Type 2, and Type 3 operations, and can be thought of as being of low, medium and high risk. Some groups, Type 2 and Type 3, are further subdivided. From Type 1 to Type 3 operations, the corresponding respirator requirements, and measures and procedures become increasingly stringent.

The classification of typical lead-containing construction tasks is based on presumed airborne concentrations obtained from the U.S. Occupational Safety and Health Administration (OSHA), the Ontario Ministry of Labour, and published research studies. The classification of Type 1, Type 2, or Type 3 operations are grouped based on the following concentrations of airborne lead:

TYPE 1 OPERATIONS	TYPE 2 OPERATIONS		TYPE 3 OPERATIONS	
	Type 2a	Type 2b	Type 3a	Type 3b
< 0.05 mg/m ³	> 0.05 to 0.50 mg/m ³	> 0.50 to 1.25 mg/m ³	> 1.25 to 2.50 mg/m ³	> 2.50 mg/m ³

TYPE 1 OPERATIONS

- Application of lead-containing coatings with a brush or roller.
- Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap.
- Removal of lead-containing coatings or materials using a power tool that has an effective* dust collection system equipped with a HEPA filter.
- Installation or removal of lead-containing sheet metal.
- Installation or removal of lead-containing packing, babbitt or similar material.
- Removal of lead-containing coatings or materials using non-powered hand tools, other than manual scraping or sanding.
- Soldering.

* Effective implies that the dust collection system should be capable of controlling airborne lead concentration levels to below 0.05 mg/m³. Employers should follow manufacturer's recommendations and maintenance specifications for optimal function.

TYPE 2 OPERATIONS

TYPE 2a OPERATIONS

- Welding or high temperature cutting of lead-containing coatings or materials outdoors. This operation is considered a Type 2a operation only if it is short-term, not repeated, and if the material has been stripped prior to welding or high temperature cutting. Otherwise, it will be considered a Type 3a operation.
- Removal of lead-containing coatings or materials by scraping or sanding using non-powered hand tools.
- Manual demolition of lead-painted plaster walls or building components by striking a wall with a sledgehammer or similar tool.

TYPE 2b OPERATIONS

- Spray application of lead-containing coatings.

TYPE 3 OPERATIONS

TYPE 3a OPERATIONS

- Welding or high temperature cutting of lead-containing coatings or materials indoors or in a confined space.
- Burning of a surface containing lead.
- Dry removal of lead-containing mortar using an electric or pneumatic cutting device.
- Removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filter.
- Removal or repair of a ventilation system used for controlling lead exposure.
- Demolition or cleanup of a facility where lead-containing products were manufactured.
- An operation that may expose a worker to lead dust, fume or mist that is not a Type 1, Type 2, or Type 3b operation.

TYPE 3b OPERATIONS

- Abrasive blasting of lead-containing coatings or materials.
- Removal of lead-containing dust using an air mist extraction system.

Employers, supervisors, and workers should be able to recognize and classify lead-containing operations in order to provide appropriate respirators, measures and procedures. Respirator requirements are listed in Table 1 for Type 1, Type 2, and Type 3 operations.

TABLE 1: RESPIRATOR REQUIREMENTS

Operations	Required Respirator
Type 1 (0 - 0.05 mg/m³)	
<ul style="list-style-type: none"> • Application of lead-containing coatings with a brush or roller. • Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap. • Removal of lead-containing coatings or materials using a power tool that has an effective dust collection system equipped with a HEPA filter. • Installation or removal of lead-containing sheet metal. • Installation or removal of lead-containing packing, babbitt or similar material. • Removal of lead-containing coatings or materials with a non-powered hand tool, other than manual scraping and sanding. • Soldering. 	<p>Respirators should not be necessary if the general procedures listed in Section 6.1 are followed and if the level of lead in the air is less than 0.05 mg/m³. However, if the worker wishes to use a respirator, a half-mask particulate respirator with N-, R- or P-series filter, and 95, 99 or 100% efficiency should be provided.</p>
Type 2a (0.05 to 0.50 mg/m³)	NIOSH APF = 10
<ul style="list-style-type: none"> • Welding or high temperature cutting of lead-containing coatings or materials outdoors. This operation is considered a Type 2a operation only if it is short-term, not repeated, and if the material has been stripped prior to welding or high temperature cutting. Otherwise, it will be considered a Type 3a operation. • Removal of lead-containing coatings or materials by scraping or sanding using non-powered hand tools. • Manual demolition of lead-painted plaster walls or building components by striking a wall with a sledge hammer or similar tool. 	<p>Half-mask particulate respirator with N-, R- or P-series filter, and 95, 99 or 100% efficiency.</p>
Type 2b (0.50 mg/m³ to 1.25 mg/m³)	NIOSH APF = 25
<ul style="list-style-type: none"> • Spray application of lead-containing coatings. 	<p>Powered air purifying respirator equipped with a hood or helmet, and any type of high efficiency filter.</p> <p>Supplied air respirator equipped with a hood or helmet and operated in a continuous flow mode.</p>

Operations	Required Respirator
Type 3a (1.25 to 2.50 mg/m³)	NIOSH APF = 50
<ul style="list-style-type: none"> Welding or high temperature cutting of lead-containing coatings or materials indoors or in a confined space. Burning of a surface containing lead. Dry removal of lead-containing mortar using an electric or pneumatic cutting device Removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filter. Removal or repair of a ventilation system used for controlling lead exposure. Demolition or cleanup of a facility where lead-containing products were manufactured. An operation that may expose a worker to lead dust, fume or mist that is not a Type 1, Type 2 or Type 3b operation. 	<p>Full-facepiece air-purifying respirator with N-, R- or P-series filter, and 100% efficiency.</p> <p>Tight-fitting powered air-purifying respirator with a high efficiency filter.</p> <p>Full-facepiece supplied-air respirator operated in demand mode.</p> <p>Half-mask or full-facepiece supplied air respirator operated in continuous-flow mode.</p>
Type 3b (more than 2.50 mg/m³)	NIOSH APF ≥ 1000
<ul style="list-style-type: none"> Abrasive blasting of lead-containing coatings or materials. 	Type CE abrasive-blast supplied respirator operated in a positive pressure mode with a tight-fitting half-mask facepiece.
<ul style="list-style-type: none"> Removal of lead-containing dust using an air mist extraction system. 	Full-facepiece supplied-air respirator operated in pressure-demand or other positive-pressure mode.

* NIOSH APF = National Institute of Occupational Safety and Health Assigned Protection Factor

Note: It is recommended that compressed air used to supply air respirators should meet the breathing air purity requirement of CSA Standard Z180.1-00. Where an oil-lubricated compressor is used to supply breathing air, a continuous carbon monoxide monitor/alarm must be provided.

6.0 MEASURES AND PROCEDURES FOR WORKING WITH LEAD

Protective measures and procedures should be implemented when working with lead. Specific measures and procedures will depend on how the work is classified. This section of the guideline outlines general measures and procedures for all work with lead, followed by specific recommendations for Type 1, Type 2, and Type 3 operations.

6.1 General Measures and Procedures for Type 1, Type 2, and Type 3 Operations

The following is a list of general measures and procedures that should be followed for **all** work with lead:

- washing facilities consisting of a wash basin, water, soap and towels should be provided and workers should use these washing facilities before eating, drinking, smoking or leaving the project;
- workers should not eat, drink, chew gum or smoke in the work area;
- drop sheets should be used below all lead operations which produce or may produce dust, chips, or debris containing lead;
- dust and waste should be cleaned up and removed by vacuuming with a HEPA filter equipped vacuum;
- clean-up after each operation should be done to prevent lead contamination and exposure to lead;
- dust and waste should be cleaned up at regular intervals and placed in a container that is:
 - dust tight
 - identified as containing lead waste
 - cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before being removed from the work area
 - removed from the workplace frequently and at regular intervals;
- the work area should be inspected daily at least once to ensure that the work area is clean; and
- compressed air or dry sweeping should not be used to clean up any lead-containing dust or waste from a work area or from clothing.

6.2 Measures and Procedures for Type 1 Operations

Respirators should not be necessary if the general procedures (above) are followed. However, any worker who requests a respirator should be provided with a half-mask particulate respirator with N-, R- or P-series filter, and 95, 99 or 100% efficiency.

6.3 Measures and Procedures for Type 2 Operations

Preparation of the Work Area

For all Type 2 operations, signs should be posted in sufficient numbers to warn of the lead hazard. There should be a sign, at least, at each entrance to the work area. The signs should display the following information in large, clearly visible letters:

1. There is a lead dust, fume or mist hazard.
2. Access to the work area is restricted to authorized persons.
3. Respirators must be worn in the work area.

Personal Protective Clothing and Equipment

Suitable protective clothing and equipment, as recommended in Section 4.3, should be worn by every worker who enters the work area.

Where lead-containing paints or coatings are being applied by spraying, all workers in the work area should wear a powered air purifying respirator equipped with a hood or helmet and a high efficiency filter, or a supplied air respirator equipped with a hood or helmet and operated in a continuous flow mode should be adequate.

For all other Type 2 operations, a half-mask particulate respirator with N-, R- or P-series filter, and 95, 99 or 100% efficiency should be adequate.

6.4 Measures and Procedures for Type 3 Operations

6.4.1 Preparation of the Work Area

Warning signs should be provided for all Type 3 operations. Signs should be posted in sufficient numbers to warn of the lead hazard, and at least at each entrance of the work area. The signs should display the following information in large, clearly visible letters:

1. There is lead dust, fume or mist hazard.
2. Access to the work area is restricted to authorized persons.
3. Respirators must be worn in the work area.

6.4.2 Barriers, Partial Enclosures and Full Enclosures

Barriers, partial enclosures, and full enclosures are used to separate the work area from the rest of the project, and in some cases, to prevent lead exposure to other workers not directly involved in the operation. Partial and full enclosures can also prevent or reduce the dispersion of lead into the surrounding work area and environment. Barriers should only be used where full and partial enclosures are not practicable.

Barriers

Ropes or barriers do not prevent the release of contaminated dust or other contaminants into the environment. However, they can be used to restrict access of workers who are not adequately protected with proper PPE, and also prevent the entry of workers not directly involved in the operation. Ropes or barriers should be placed at a distance far enough from the operation that allows the lead-containing dust to settle. If this is not achievable, warning signs should be posted at the distance where the lead-containing dust settles to warn that access is restricted to persons wearing PPE. For example, the removal of mortar and cutting operations, ropes or barriers should be located at least 10 metres away. All workers within the barrier or warning sign zone must be adequately protected.

Partial Enclosures

Partial enclosures allow some emissions to the atmosphere outside of the enclosure. Partial enclosures may consist of vertical tarps and floor tarps so long as the tarps are overlapped and securely fixed together at the seams. A partial enclosure is not a recommended containment system if significant dust is being generated.

Full Enclosures

Full enclosures are tight enclosures (with tarps that are generally impermeable and fully sealed joints and entryways). Full enclosures allow minimal or no fugitive emissions to reach the outside environment. For full enclosures, the following requirements should be met:

- the enclosure should be made of windproof materials that are impermeable to dust
- the enclosure should be supported by a secure structure
- all joints in the enclosure should be fully sealed
- entrances to the enclosure should be equipped with overlapping tarps or air locks
- the escape of abrasive and debris from the enclosure should be controlled, at air supply points, by the use of baffles, louvers, flap seals and filters
- general mechanical ventilation should be provided to remove contaminated air from the enclosure and filtered air should be provided to replace the exhausted air
- equipment venting such air should be equipped with filters adequate to control vented air to provincial environmental standards
- the air velocity within the enclosure should provide an average minimum cross-draft or down-draft past each worker during abrasive blasting operations as follows:
 - cross-draft velocity of 0.5 m/sec (100 ft/min)
 - down-draft velocity of 0.25 m/sec (50 ft/min)

Indoor Operations

- For Type 3a operations conducted indoors, barriers, partial enclosures, or full enclosures should be provided.
- For Type 3b operations (abrasive blasting, removal of lead-containing dust using an air mist extraction system) conducted indoors, full enclosures should be provided.

Outdoor Operations

- For Type 3a and 3b operations conducted outdoors, barriers, partial enclosures, or full enclosures should be provided.
- For dry abrasive blasting conducted outdoors, full enclosures should be provided.

6.4.3 Decontamination Facility

A decontamination facility should be made available for workers carrying out the following Type 3 operations:

Type 3a Operations

- removal of lead-containing coatings and materials using power tools without an effective dust collection system equipped with a HEPA filter
- demolition or clean-up of a facility where lead-containing products were manufactured

Type 3b Operations

- abrasive blasting of lead-containing coatings or materials
- removal of lead-containing dust using an air mist extraction system

The decontamination facility should be located as close as practicable to the work area and should consist of:

- a room suitable for changing into protective clothing and for storing contaminated protective clothing and equipment
- a shower room as described below
- a room suitable for changing into street clothes and for storing clean clothing and equipment

The rooms in the decontamination facility should be arranged in sequence and constructed so as to prevent the spread of lead dust.

The shower room in the decontamination facility should be provided with the following:

- hot and cold water or water of a constant temperature that is not less than 40° Celsius or more than 50° Celsius

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- individual controls inside the room to regulate water flow and, if there is hot and cold water, temperature
 - clean towels.

Prior to each shift in which a decontamination facility is being used, a competent person should inspect the facility to ensure that there are no defects that would allow lead-containing dust to escape. Defects should be repaired before the facility is used. The decontamination facility should be maintained in a clean and sanitary condition.

Workers using the decontamination facility should do the following in the order shown:

- decontaminate protective clothing that will be reused on site by vacuuming with a HEPA-filter-vacuum or by damp wiping
- remove the decontaminated protective clothing
- place protective clothing that will not be reused on site in a container suitable for lead-containing dust and waste
- shower without removing the respirator
- remove and clean the respirator

6.4.4 Dust Control Measures

General and Local Mechanical Ventilation

Where the work area is enclosed, general mechanical ventilation should be provided. The air exhausted from an enclosed work area should pass through a dust collector effective for capturing the size of particulate matter being generated and for the volume and velocity of air moving through the enclosure.

Where a dust generating operation is carried out, local mechanical ventilation should be provided to remove dust at the source. Local mechanical ventilation is highly recommended for welding, burning, and high temperature cutting of lead-containing coatings and materials, and for the removal of lead-containing coatings and materials using power tools. Where local mechanical ventilation is used, the following should be met:

- Air velocity at any point in front of or at the opening of the ventilation hood should be sufficient to overcome opposing air currents and capture the contaminated air by causing it to flow into the hood.
- Air velocity at the source should be at least 0.5 m/sec (100 ft/min)
- Air discharged from the local mechanical ventilation system should pass through a HEPA filter and be routed out of the workplace in a way that will prevent the return of contaminants to the workplace.

If local ventilation is not practicable, an appropriate respirator (as listed in Table 1) should be provided. However, the decision that local ventilation is not practicable should not be made without first consulting the joint health and safety committee or health and safety representative, if any, and without considering the following:

- any undue economic hardship to the employer that providing a local ventilation system would cause
- the frequency and duration of the operation
- any potential risks to the workers by not providing a local ventilation system.

Wet Methods

Wet methods should be incorporated in the operation to reduce dust generation. Examples of wet methods include wetting surfaces, wet scraping, and wet shovelling.

Wetting should not be used if it would create a hazard or could cause damage to equipment or to the project. Power tools should be equipped with a shroud, and the shroud should be kept flush with the surface.

6.4.5 Personal Protective Equipment

Protective Clothing

Every worker who enters a Type 3 operation work area should wear protective clothing (see Protective Clothing in Section 4.3).

Respirators

For most Type 3 operations, workers should wear a respirator with a NIOSH approved assigned protection factor of 50 (see Respirator Requirements in Table 1). Where the operation is abrasive blasting, the operator should wear a Type CE abrasive blast supplied air respirator operated in a pressure demand or positive pressure mode with a tight-fitting half-mask or tight-fitting full-facepiece.

It is recommended that compressed air used to supply supplied air respirators meet the breathing air purity requirements of CSA Standard Z180.1-00. Where an oil-lubricated compressor is used to supply breathing air, a continuous carbon monoxide monitor/alarm should be provided.

6.4.6 Clean-Up

Dust and waste should be cleaned up and removed by vacuuming with a HEPA filter equipped vacuum, wet sweeping and/or wet shovelling. Clean-up after each operation should be encouraged to prevent lead contamination and exposure to lead.

When abrasive blasting is finished, cleanup and removal of lead-containing dust and waste should take place.

APPENDIX 1: Medical Surveillance Of Lead-Exposed Workers

Where construction workers are exposed to airborne lead, measures and procedures to control their exposure should be implemented. This guide has outlined (in Section 4) the types of controls that should be in place for various work activities. But to ensure that these controls are effective they should be periodically evaluated. One way of doing this is by establishing a medical surveillance program. A medical surveillance program refers to the systematic collection, analysis, and evaluation of health data in the workplace to identify cases, patterns, or trends suggesting an adverse effect on workers' health. It is highly recommended that employers establish and maintain a medical surveillance program in their workplace.

The essential features of a lead medical surveillance program are outlined below.

Medical Surveillance Program

Purpose

The objective of a medical surveillance program is to protect the health of workers by:

- ensuring their fitness for exposure to lead
- evaluating their absorption of lead
- enabling remedial action to be taken when necessary
- providing health education.

Program

The medical surveillance program should include the following:

- pre-employment and pre-placement medical examinations
- periodic medical examinations
- clinical tests
- health education
- record keeping.

Medical Examinations

The medical examination should include the following:

History

The initial medical and occupational history should include enquiries about the worker's previous exposure to lead (both occupational and non-occupational), personal habits

(smoking and hygiene), and history of present or past gastrointestinal, hemopoietic, renal, reproductive, endocrine, or nervous disorders.

At subsequent examinations, the history should be updated to include:

- information on the frequency and duration of exposure to lead since the previous examination;
- the occurrence of signs and symptoms that may be an early indication of lead intoxication, e.g., abdominal pain, constipation, vomiting, asthenia, paraesthesia and psychological change.

Physical Examination

Medical surveillance should include a general physical examination. Particular attention should be directed to those systems that may be affected by lead. Personal hygiene should also be noted.

Biological Monitoring

Biological monitoring refers to the collection and assessment of bodily fluids or tissue, to evaluate occupational exposure to chemical hazards. The concentration of lead in a worker's blood is a good indicator of lead absorption by that individual. It does not indicate the total body burden of lead, but it is useful in the assessment of a worker's fitness for continued exposure to lead. As such, determining the blood lead levels in lead-exposed workers is highly recommended.

The concentration of lead in the blood can be used to determine:

- When a worker should be removed from lead exposure;
- When an enquiry regarding work practices and personal hygiene should be made;
- When further test(s) should be made; and,
- When a worker may be permitted to return to work.

The determination of whether a worker is fit, fit with limitations or unfit for exposure to lead should only be made by a physician. In addition, a physician should determine the required frequency for biological monitoring on an individual basis.

If symptoms or signs of lead intoxication are present the worker should be removed from lead exposure regardless of blood lead level.

In addition, it is recommended that a pre-placement blood-lead test be taken to establish a baseline for each worker that is exposed to lead.

APPENDIX 2: Respirator Requirements & Other Measures and Procedures for Type 1, 2, and 3 Lead-Containing Operations

OPERATIONS	REQUIRED RESPIRATOR	OTHER MEASURES & PROCEDURES
TYPE 1		
<ul style="list-style-type: none"> • Application of lead-containing coatings with a brush or roller. • Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap. • Removal of lead-containing coatings or materials using a power tool that has an effective dust collection system equipped with a HEPA filter. • Installation or removal of lead-containing sheet metal. • Installation or removal of lead-containing packing, babbitt or similar material • Removal of lead-containing coatings or materials using non-powered hand-held tools, other than manual scraping or sanding. • Soldering. 	<p>Respirators should not be necessary if general procedures listed in Section 6.1 of the Guideline are followed and if the levels of lead in air are less than 0.05 mg/m³. However, if the worker wishes to use a respirator, a half-mask particulate respirator with N-, R- or P-series filter, and 95, 99 or 100% efficiency should be provided.</p>	<ul style="list-style-type: none"> • Washing facilities consisting of wash basin, water, soap and towels should be provided and workers should use these washing facilities before eating, drinking, smoking or leaving the project; • Workers should not eat, drink, chew gum or smoke in the work area; • Dust and waste should be cleaned up at regular intervals and placed in a container that is: <ul style="list-style-type: none"> - dust tight - identified as containing lead waste - cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before being removed from the work area - removed from the workplace frequently and at regular intervals; • Drop sheets should be used below all lead operations which produce or may produce dust, chips, or debris containing lead; • Cleanup after each operation is encouraged to prevent lead contamination and exposure to lead; • Work area should be inspected at least daily to ensure that the work area is clean; • Compressed air or dry sweeping should not be used to clean up any lead-containing dust or waste from a work area or from clothing.

OPERATIONS	REQUIRED RESPIRATOR	OTHER MEASURES & PROCEDURES
TYPE 2		
TYPE 2a		
<ul style="list-style-type: none"> Welding or high temperature cutting of lead-containing coatings or materials outdoors. This operation is considered a Type 2a operation only if it is short-term, not repeated, and if the material has been stripped prior to welding or high temperature cutting. Removal of lead-containing coatings or materials by scraping or sanding using non-powered hand tools Manual demolition of lead-painted plaster walls or building components by striking a wall with a sledge hammer or similar tool 	Half-mask particulate respirator with N-, R-, or P-series filter and 95, 99 or 100 percent efficiency.	<p>(In addition to Type 1 measures and procedures.)</p> <ul style="list-style-type: none"> Signs should be posted in sufficient numbers to warn of the lead hazard. There should be a sign, at least, at each entrance to the work area. The signs should display the following information in large, clearly visible letters: <ul style="list-style-type: none"> There is a lead dust, fume or mist hazard. Access to the work area is restricted to authorized persons. Respirators must be worn in the work area. Suitable protective clothing and equipment should be worn by every worker who enters the work area (refer to Section 4.3 of the guideline).
TYPE 2b		
<ul style="list-style-type: none"> Spray application of lead-containing coatings. 	<p>Powered air purifying respirator equipped with a hood or helmet, and a high efficiency filter.</p> <p>OR</p> <p>Supplied air respirator equipped with a hood or helmet and operated in a continuous flow mode.</p>	

OPERATIONS	REQUIRED RESPIRATOR	OTHER MEASURES & PROCEDURES	
TYPE 3			
TYPE 3a			
<ul style="list-style-type: none">Welding or high temperature cutting of lead-containing coatings or materials indoors or in a confined space.Burning of a surface containing lead.Dry removal of lead-containing mortar using an electric or pneumatic cutting device.Removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filter.Removal or repair of a ventilation system used for controlling lead exposure.Demolition or cleanup of a facility where lead-containing products were manufactured.An operation that may expose a worker to lead dust, fume or mist that is not a Type 1, Type 2, or Type 3b operation.	Full-facepiece air-purifying respirator equipped with N-, R-, or P-series filter and 100% efficiency. OR Tight-fitting PAPR with a high efficiency particulate filter. OR Half-mask or full-facepiece supplied air respirator operated in a continuous flow mode. OR Half-mask supplied air respirator operated in pressure-demand or other positive-pressure mode.	(In addition to Type 1 and Type 2 measures and procedures.) <ul style="list-style-type: none">For Type 3a operations conducted indoors or outdoors, enclosures should be provided in the form of barriers, partial enclosures, or full enclosures.For Type 3b operations conducted indoors, full enclosures should be provided.With the exception of dry abrasive blasting conducted outdoors, enclosures provided for all other Type 3b operations conducted outdoors should be in the form of barriers, partial enclosures, or full enclosures. For dry abrasive blasting outdoors, full enclosures should be provided.Where there is an enclosure, general mechanical ventilation should be provided.A decontamination facility (refer to 6.4.3 of the guideline) should be made available for workers carrying out the following operations:<ul style="list-style-type: none">abrasive blasting of lead-containing coatings or materialsthe removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filterremoval of lead-containing dust using an air mist extraction systemdemolition or cleanup of a facility where lead-containing products were manufactured.When abrasive blasting is finished, dust and waste should be cleaned up and removed by vacuuming with a HEPA filter equipped vacuum, wet sweeping and/or wet shovelling.Where a dust generating operation is carried out, local exhaust ventilation should be provided to remove dust at the source. Wet methods should also be incorporated in the operation to reduce dust generation.	
TYPE 3b			
<ul style="list-style-type: none">Abrasive blasting of lead-containing coatings or materials.	Type CE abrasive-blast supplied air respirator operated in a positive-pressure mode with a tight-fitting half-mask facepiece. Type CE abrasive-blast supplied air respirator operated in a pressure-demand or positive pressure mode with a tight-fitting full-facepiece		
<ul style="list-style-type: none">Removal of lead-containing dust using an air mist extraction system	Supplied air respirator equipped with a tight-fitting half-mask or full-facepiece and operated in pressure demand or positive pressure mode.		

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