Halton District School Board

Request for Tender
RFT 20-187

Door Replacement - Harrison Public School

Closing Date: September 9, 2020

Closing Time: 2:00 p.m.

Sealed RFTs will be received **via email to arrudama@hdsb.ca**
on or before 2:00 p.m., Eastern Daylight Time

Late, Facsimile Bids will not be considered

August 18, 2020

Mario Arruda, CPPB
Officer – Purchasing

Communications Notice

To obtain documents online please visit: https://hdsb.bidsandtenders.ca

If you subscribe to bids & tenders you can login to your account to download the document(s) without the preview watermark. You may also opt to purchase a one-time download for this opportunity. Documents are not provided in any other manner.

All proponents shall be registered as a Plan Taker for this opportunity, which will enable the proponent to download the Request for Proposal (RFP) without the watermark preview, to receive addenda email notifications, and to download addenda.

Should the HDSB receive a proposal that is subsequently found to be from a bidder that is not registered with bids & tenders and the bidder did not obtain the proposal document from https://hdsb.bidsandtenders.ca the HDSB reserves the right to remove the proposal from further consideration.

To ensure receipt of the latest information and updates via email regarding this opportunity, the onus is on the proponent to register as a Plan Taker for this opportunity at https://hdsb.bidsandtenders.ca.

The following documents form part of all HDSB competitive proposal documents:

HDSB Procurement Administrative Procedure:

https://www.hdsb.ca/our-board/Policy/Procurement.pdf

HDSB Asbestos Management in Facilities Administrative Procedure:

https://www.hdsb.ca/our-board/Policy/AsbestosManagementInFacilities.pdf

HDSB Vendor Performance Management Administrative Procedure:

https://www.hdsb.ca/our-board/Policy/VendorPerformanceManagement.pdf

Broader Public Sector Procurement Directive

https://www.doingbusiness.mgs.gov.on.ca/mbs/psb/psb.nsf/Attachments/001-BPS_Procurement_Directive/$FILE/BPS_Procurement_Directive.pdf

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Part A – Outline and Instructions

1. Introduction and Board Profile

The Halton District School Board is composed of approximately 104 school locations (86 elementary and 18 secondary schools). These locations service approximately 64,300 regular day school students (Junior Kindergarten to Grade 12). The Board employs approximately 6,600 employees. Please visit our website **http://www.hdsb.ca** for additional information.

2. General Terms of the RFT

The Halton District School Board, hereinafter referred to as HDSB, is seeking qualified Contractors to complete a Make-Up Air Unit Replacement at Harrison PS, 59 Rexway Dr, Georgetown, ON L7G 1P9 in accordance with the drawings and specifications provided. Specific details of the RFT are to be found in the attached Scope of Work.

SPECIAL NOTE: Recognizing that the world is currently experiencing a global pandemic which has created restrictions on the completion of some construction projects, the HDSB would like to request that work commence September, 2020.

If the current pandemic prevents the completion of work by November 30, 2020, the HDSB will work with the successful Bidder to come to an agreement to allow the completion of work.

3. Bid Security and Bonding Requirements

Any bid submission equal to or greater than $500,000, must be submitted with a Bid Bond in the value of ten percent (10%) of the Total Cost and a Surety Consent in favour of the Halton District School Board. The Surety Consent shall cover a Performance Bond and a Labour & Materials Payment bond, each in the amount of fifty percent (50%) of the contract price as a guarantee that the Bidder shall execute the contract upon award.

The Bid Security so submitted shall be irrevocable and valid for 90 from closing date set for the submission of tender.

In order to be considered for award of a contract equal to or over $500,000, the Bidder shall submit as part of their Submission, a Surety Consent, completed by a Bonding Company. Any others will not be accepted.

Upon receipt of written notice from the Halton District School Board that it has been awarded the Contract, the successful Bidder shall provide, within five (5) working days of such notice, an original Performance Bond and a Labour and Material Payment Bond, each for the amount of fifty per cent (50%) of the total lump sum price, to guarantee the performance of all obligations of the Contract.

4. RFT Closing Information

Bidders must submit their Submission **via email** on or before 2:00 p.m., Eastern Daylight Time on September 9, 2020 (the "Closing Time") to the following address:

arrudama@hdsb.ca
Attention: Mario Arruda

To ensure consideration of your Submission it must be delivered and received via email time/date stamp prior to the Closing Time. The Declaration Signature Sheet (Appendix A) must be signed in the space(s) provided, in ink, in longhand, by a person who is authorized by the Bidder to bind the Bidder. *ANY UNSIGNED RESPONSE MAY BE DECLARED INVALID.*

Submissions delivered after the date and time specified **will not be considered**, and will be returned. Submissions delivered to an address other than as specified **will not be considered**.

5. Accuracy of Information/Liability for Errors or Omissions

While the HDSB has used considerable efforts to ensure an accurate representation of information in this document, the information contained in it is supplied solely as a guideline for Bidders. Any data contained in this RFT or provided by way of Addenda are estimates only and are for the sole purpose of indicating to the Bidder the general size of what is being requested hereunder. The information is not guaranteed or warranted to be accurate by the HDSB, nor is it necessarily comprehensive or exhaustive. Nothing in this document is intended to relieve Bidders from forming their own opinions and conclusions with respect to the matters addressed in this RFT. It is the Bidder's responsibility to avail itself of all the necessary information to prepare a Submission in response to this RFT.

6. Communication After RFT Issuance

All Communications regarding any aspect of this RFT must be submitted via Bids and Tenders.

Bidders that fail to comply with the requirement to direct all communications to the RFT Authority via Bids and Tenders may be disqualified from this RFT process. Without limiting the generality of this provision, Bidders shall not communicate with or attempt to communicate with the following as it relates to this RFT:

- any employee or agent of the HDSB, other than the RFT Purchasing contact;
- any member of the HDSB governing body including, without limitation, the director, officers, trustees, superintendents, and any advisors thereto;

Bidders shall promptly examine this RFT and all Appendices, including the Form of Tender, and:

- shall report any errors, omissions or ambiguities; and
- may direct questions or seek additional information on or before the Deadline for Questions to the RFT Purchasing contact.

It is the responsibility of the Bidder to seek clarification, by submitting questions to the RFT Purchasing Contact, on any matter it considers to be unclear. The HDSB shall not be responsible for any misunderstanding on the part of the Bidder concerning this RFT or its process.
In the event a Bidder has any reason to believe that an error, omission or ambiguity exists, the Bidder must notify the RFT Purchasing Contact in writing prior to submitting a Proposal.

If appropriate, the RFT Purchasing Contact will then clarify the matter for the benefit of all Bidders by publication on the same public platform, its website or by notice to Bidders who have requested a copy of this RFT in the same manner as set out in section 6 below.

In answering a Bidder's questions, the HDSB will set out the question, without identifying the Bidder that submitted the question, and the HDSB may in its sole discretion:

- edit the question for clarity;

- answer similar questions from various Bidders only once.

Where an answer results in any change to the RFT, such answer will be formally evidenced through the issue of a separate addendum for this purpose.

7. Addenda

If the HDSB for any reason, determines that it is necessary to provide additional information relating to this RFT, such information will be communicated to all Bidders by addendum in the same manner the RFT was communicated. Each Addendum shall form an integral part of this RFT. This RFT may only be amended in accordance with this section.

All questions related to this Tender must be submitted in writing via bids and tenders prior to 2 p.m. on August 31, 2020. Any addendum will be posted no later than September 2, 2020.

Any amendment or supplement to this RFT made in any other manner will not be binding on the HDSB.

All Addenda shall become an integral part of this RFT and shall be incorporated into any content. Each Bidder shall be responsible for verifying before depositing its Proposal that it has received all Addenda that have been issued.

8. Planned Schedule of Events – Project Schedule

Event	Date
Release of RFT	August 18, 2020
Mandatory Site Meeting – at 11:00 a.m.	August 25, 2020
Question Deadline	August 31, 2020
Issuance of Final Addendum	September 2, 2020
RFT Closing	September 9, 2020
Project Start	September 2020
Project Completion	November 30, 2020

9. Bidder's Costs

Bidders shall bear all costs and expenses incurred relating to any aspect of its participation in this RFT process, including all costs and expenses relating to the Bidder's participation in:

- the preparation, presentation and receipt of its Submission;
- the Bidders attendance at any meeting in relation to the RFT process, including any presentation or interview;
- the conduct of any due diligence on its part, including any information-gathering activity;
- the preparation of the Bidder's own questions prior to the Deadline for Questions; and
- any discussion and/or finalization, if any, in respect of the Form of Agreement.

10. Bidding Format

Unless otherwise specified in these RFT documents or the final contract entered into between the HDSB and the successful Bidder, responses shall be for a stipulated sum without escalator clauses or other qualifications (when applicable). Bidders submitting a bid with escalator clauses or other qualifications that are not in accordance with the terms and conditions of this RFT may have their bid rejected.
All information entered on this RFT document must be type written or entered in ink. No pencil entries will be accepted.

Erasure(s), overwriting or strike-out(s) must be initialed in ink by the person signing this Submission.

Respondents will use the following format for their submission:

- Form of Tender (complete form must be included with your submission, including bonds and any other information as may be required herein)

- Appendix A - Signed Declaration Sheet (must be included with your submission)

11. Pricing

Please do not add tax to base (unit) price. (when applicable). Early payment discounts may be considered part of the Submission. Credit Card payment acceptance may be considered part of the Submission.

12. Subcontractors

The Contractor agrees to preserve and protect the rights of the parties under the contract with respect to work performed under subcontract, and shall:

• enter into contracts or written agreements with their subcontractors to require them to perform their work in accordance with and subject to the terms and conditions of the contract. Further, the Contractor shall be fully responsible to the Owner for acts and omissions of their subcontractors and of any persons directly or indirectly employed by them as for acts and omissions of persons directly employed by them.

• therefore agree that they will incorporate the terms and conditions of the Contract Documents into all Subcontractor Agreements they enter into with their subcontractors. The HDSB reserves the right, at its discretion to waive the requirement to utilized the mandatory list of pre-qualified sub-trades at any time during the tendering process based on market conditions.

13. Mandatory Site Meeting

There will be a Mandatory Site Meeting starting on August 25, 2020 commencing at the main office of Harrison Public School. The Mandatory Site Meeting will start at 11:00 a.m.

Bidders must sign in upon their arrival. Bidders arriving after the specified start time will not be permitted to participate in the meeting, will be disqualified from the project, and asked to remove themselves from the site. Failure to be present and to sign in at all site visits will result in the disqualification of your submission

Part B – Standard Terms and Conditions

14. Scope

Unless otherwise expressly stated these Standard Terms and Conditions form a part of this document and apply in like force to contracts for the purchase of commodities as stated in this document. All Bidders will be bound by the terms and conditions set forth, except as specifically qualified in Special Terms and Conditions issued in connection with this document or any Addenda issued relating to this document.

15. Definitions

As used herein as well as in all RFSQ, RFQ, RFP, RFI, Tender or contract documents issued by the Halton District School Board, the following definitions will apply.

Addenda/Addendum	an addition/change made to this document, subsequent to its printing or publication.
Applicable Law and Applicable Laws	means any common law requirement and all applicable and enforceable statutes, regulations, directives, policies, administrative interpretations, orders, by-laws, rules, guidelines, approvals and other legal requirements of any government and/or regulatory authority in effect from time to time.
Bid/Submission/Proposal	an offer from a Bidder in response to a Proposal/Tender which is subject to acceptance or rejection.
Proponent	a legal entity, being a company, partnership or individual who submits a Bid, Proposal, or Submission in response to a formal request for Bid, Proposal, or Submission.
Board/HDSB	means the Halton District School Board.
Contract	means the agreement, in writing, governing the performance of the Work and/or the purchase and sale of commodities and includes, without limitation, the document (including standard terms and conditions), Bidder Submission and the written document accepting the Bidder Submission (including any notice of acceptance or award).
Document	means the document describing the Goods and/or Services to be purchased and the terms upon which the Goods and/or Services are to be purchased and

	includes, without limitation, those documents referenced on the index of the document and such Addenda as may be issued by the HDSB.
Goods *or* **Services**	product and/or any and all labour, vehicles or equipment used by a Bidder in fulfilling a Contract.
HST	means Harmonized Sales Tax.
Intellectual Property	means any trademark, copyright, moral right, patent, industrial design, trade name, domain name, trade secret, know how, integrated circuit topography or other intellectual property, industrial property or proprietary right owned by, licensed to, or used by any third person.
Mandatory Requirement	a minimum requirement – where the words “mandatory”, “must”, “required”, “shall” and/or “will” are referenced in this document and such requirement is identified as a Mandatory Requirement. Failure to comply will deem the submission non-compliant and the bid/submission will be disqualified.
Proposal/RFP	a sealed written offer to supply Goods and/or Services of any value, acceptance of which may be subject to negotiation.
Quotation/RFQ	a written offer to supply Goods and/or Services with a value that is less than $100,000.
Response	the package submitted by a Bidder in response to an RFP or RFT.
Specifications	those stated requirements for the Goods and/or Services set out in the document.
Subcontractor	a person, firm or corporation having a direct contract with the contractor to perform a part or parts of the Work, or to supply Goods worked to a special design according to the contract documents, but does not include one who merely supplies Goods not so worked.
Tender/RFT	a sealed written offer to supply Goods and/or Services with a value that is greater than $100,000.
Bidder Submission	means the document as completed by the Bidder for the purpose of offering to sell to the HDSB the services

	and/or goods specified in the document, and includes but is not limited to Quotations, Tenders and Proposals.
Work	means the Work to be undertaken by the Bidder pursuant to the provisions of the Contract.

16. Reserved Rights of the HDSB

The HDSB reserves the right to:

(a) make public the names of any or all Bidders;

(b) request written clarification or the submission of supplementary written information in relation to the clarification request from any Bidder and incorporate a Bidder's response to that request for clarification into the Bidder's Submission;

(c) assess a Bidder's Submission on the basis of:

(i) a financial analysis determining the actual cost of the Submission when considering factors including quality, service, price and transition costs arising from the replacement of existing goods, services, practices, methodologies and infrastructure (howsoever originally established);

(ii) information provided by references;

(iii) the Bidder's past performance on previous contracts awarded by the HDSB;

(iv) the information provided by a Bidder pursuant to the HDSB exercising its clarification rights under this RFT process; or

(v) other relevant information that arises during this RFT process;

(d) waive formalities and accept Submissions that substantially comply with the requirements of this RFT;

(e) verify with any Bidder or with a third party any information set out in a Submission;

(f) check references other than those provided by any Bidder;

(g) disqualify any Bidder whose Submission contains misrepresentations or any other inaccurate or misleading information;

(h) disqualify any Bidder or the Submission of any Bidder who has engaged in conduct prohibited by this RFT;

(i) disqualify a Bidder for any conduct, situation or circumstance that constitutes a Conflict of Interest, as solely determined by the HDSB and at any time.

(j) 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;

(k) select any Bidder other than the Bidder whose bid reflects the lowest cost to the HDSB;

(l) review all Bidders utilizing the HDSB Vendor Performance Management Administrative Procedure, which can include suspension of Bidders who fail the meet the HDSB's expectations or who are involved in litigation or threatened litigation against HDSB. The HDSB Vendor Performance Management Administrative Procedure is found at the attached link (www.hdsb.ca/our-board/Policy/VendorPerformanceManagement.pdf)

(m) award to one or more bidders according to their requirements;

(n) cancel this RFT process at any time and for any or no reason;

(o) cancel this RFT process at any stage and issue a new RFT for the same or similar deliverables;

(p) accept any Submission in whole or in part; or

(q) award to multiple bidders if circumstances are warranted;

(r) reject any or all Submissions;

(s) to limit the number of pre-qualified Bidders eligible to submit proposals for any future projects. HDSB shall not be obligated to provide all pre-qualified Bidders with the same opportunity to bid on all future projects within each stated category. By participating in this RFT, Bidders acknowledge that there is no guarantee that a Bidder will receive any assignments, work or projects and that there is no expectation that any specified number of projects will be made available during the pre-qualification term;

and these reserved rights are in addition to any other express rights or any other rights that may be implied in the circumstances.

In addition, the HDSB reserves the right at any time during normal business hours, and as often as the HDSB may deem necessary, to examine, the successful Bidder's records with respect to the successful Bidder's services under the Bidder's purchase order and/or Submission and any Contract. The successful Bidder shall permit the HDSB to audit, examine, and make copies, excerpts or transcripts from such records, and to make audits of data relating to matters covered by a Submission, any purchase order and/or any

Contract. The successful Bidder shall maintain and retain all records and other documents related to a Submission, any purchase order, and/or any Contract for a period of seven (7) years from the date of final payment, except in cases where unresolved audit questions require a longer period of time for resolution, as determined by the HDSB.

17. Litigation with the HDSB

The HDSB may, in its absolute discretion, reject a Submission submitted by a Bidder **prior to or after a Submission opening, if the Bidder:**

(a) is or has in the past 10 years been a party to litigation with the HDSB; or

(b) directly or indirectly, including by common ownership or control or otherwise, is related to a party currently in litigation with the HDSB or a party that has in the past 10 years been in litigation with the HDSB; or

(c) intends to use a subcontractor in respect of a specific project who is, or has in the past 10 years been a party to litigation with the HDSB, or who is related to a party currently in litigation with the HDSB or a party that has in the past 10 years been in litigation with the HDSB.

For the purposes hereof, the phrase "litigation with the HDSB" includes cases in which the Bidder or prospective Bidder or any of the parties named above, has advised the HDSB in writing of their intention to commence litigation, or have commenced or have advised the HDSB of their intention to commence an arbitral proceeding against the HDSB (excepting only construction lien demands, notices or proceedings or arbitrations under O. Reg 444/98 of the Education Act).

In determining whether or not to exercise its discretion as set out herein, the HDSB will consider whether the litigation (past or current) is likely to affect a Bidder's ability to work with the HDSB, its consultants and representatives, and whether the HDSB's experience with the Bidder, the related party or subcontractor, as the case may be, in the matter giving rise to the litigation, indicates that the HDSB is likely to incur increased staff and legal costs in the administration of the Contract if it is awarded to the Bidder.

18. Accessibility for Ontarians with Disabilities (AODA)

The HDSB is committed to accessibility and preventing and removing barriers for persons with disabilities. Where practicable, the HDSB will incorporate accessibility features and criteria when procuring or acquiring goods, services and facilities, in which case, a Bidder must be capable of recommending and delivering same in an inclusive and accessible manner, consistent with the Ontario Human Rights Code ("OHRC"), the Ontarians with Disabilities Act, 2005 ("AODA") and its Regulations, in order to achieve accessibility for Ontarians with disabilities. If the HDSB determines that it is impractical to do so an explanation will be provided upon request.

In accordance with Ontario Regulation 429-07 made under the AODA, the HDSB has established policies, practices and procedures governing the provisions of its services to persons with disabilities, which may be found at:
https://www.hdsb.ca/our-board/Pages/Accessibility.aspx

19. Ability to Negotiate/Contract Negotiations

The HDSB reserves the right to enter into negotiations with any Bidder as it sees fit, or with another Bidder concurrently. The HDSB will not incur liability to any Bidder as a result of these negotiations.

The HDSB may, prior to and after Contract award, negotiate changes to the specifications, the type of materials or any conditions with the successful or preferred Bidder or one or more of the Bidders without having any duty or obligation to advise any other Bidder or to allow them to vary their bid prices as a result of such changes, and the HDSB shall have no liability to any other Bidder as a result of such negotiations or modifications.

20. Agree to Abide by the Established Process

It is vital to the HDSB that the process leading to the recommendation of a bidder(s) and the conclusion of an agreement for the provision of these services be, and be seen to be, open and fair and that each of the respondents is treated equally.

No respondent can be seen to be deriving, intentionally or otherwise, an advantage or information, which is not equally available to all other respondents. Nor is it acceptable that any advantage or information be sought or obtained from any unauthorized staff or representative of the HDSB, or any benefit derived from any special or personal relationships or contacts.

All communications, including requests for information, between respondents to this RFT and the HDSB should be between only the representative(s) of the HDSB who has been authorized and designated for that particular purpose. Bidders must not rely on information from any other source.

21. Assignment

Unless otherwise stated in this document, it is mutually agreed and understood that the successful Bidder will not assign, transfer, convey, sublet or otherwise dispose of the Contract (in whole or in part) or the right, title or interest therein, or the Bidder's power to execute such contract to any other person, firm, company or corporation without the previous written consent of the HDSB. Any act in derogation of the foregoing shall be null and void. For the purposes hereof, the transfer or issuance of shares by a Bidder of more than fifty (50%) percent of the voting securities of a Bidder to any third party other than to an affiliate (as such term is defined in the Business Corporations Act (Ontario)) or the shareholder or shareholders of the Bidder as of the Closing Date, whether or not such

transfer or issuance of voting securities takes place in one or more transactions, shall, for the purposes of this Agreement, be deemed to be an assignment of the Contract requiring the consent of the HDSB, unless such transfer or issuance of shares is made pursuant to an initial public offering of common shares under the Securities Act (Ontario).

22. Award

The final award will be based on (but not limited to) the best value for money and quality service delivery from a Bidder who complies with the provisions of this Submission solicitation, including specifications, contractual terms and conditions, who can reasonably be expected to provide satisfactory performance on the proposed Contract based on reputation, references, performance on previous contracts, and sufficiency of financial and other resources, and provides a solution that is a fit with the HDSB's requirements. The lowest price or bid shall not be the sole, determinative factor.

23. Breaking a Tie

In the event of a tie score, the HDSB will resolve same based on the earlier date/time stamp of when the bid was received by HDSB in accordance with this RFT.

24. Change Orders

A change order results when unforeseen conditions are identified from the original scope of work (Contract or Purchase Order) and is inextricably tied to the original scope.

The following steps should occur prior to issuance of a change order that does not originate from HDSB senior management:

- appropriate HDSB approval must be acquired prior to modifying any Contract or Purchase Order
- appropriate written HDSB approval must be obtained prior to commencing the work.

All requests or recommendations for Change Orders shall include the impact to both price and schedule for the work to be performed. HDSB shall have the right to retain consultants or experts to help identify the need or to verify the impact of the change order on the project.

No change in the work shall proceed without the written approval of the Owner.
Any change shall be initiated by Owners "WORK ORDERS" which shall bear the change cost and the Contractor's and Owner's representative's signatures as an instruction to proceed. All changes shall be restricted to five percent (5%) overhead and five percent (5%) profit applied to the labour and material cost.

25. Conflict of Interest

For the purposes hereof, “Conflict of Interest” includes:

(a) in relation to the Submission process, the Bidder has an unfair advantage or engaged in conduct, directly or indirectly, that may give the Bidder an unfair advantage, including:

(i) having or having access to information in the preparation of the Submission that is confidential to the HDSB and not available to other Bidders;

(ii) communicating with any person with a view to influencing preferred treatment in the Submission process; or

(iii) engaging in conduct that compromises or could be seen to compromise the integrity of the open and competitive process and render that process non-competitive and unfair; or

(b) in relation to the performance of the Work, services or contractual obligations, the Bidder’s other commitments, relationships or financial interests:

(i) could or could be perceived to exercise an improper influence over the objective, unbiased and impartial exercise of the Bidder’s independent judgments; or

(ii) could or could be perceived to compromise or impair or be incompatible with the effective performance of the Bidder’s work, services or contractual obligations.

The Bidder shall:

(a) avoid any Conflict of Interest in the Submission process and in the performance of its contractual obligations;

(b) disclose to the HDSB without delay any actual or potential Conflict of Interest that arises during the Submission process or during the performance of its contractual obligations; and

(c) comply with any requirements prescribed by the HDSB to resolve any Conflict of Interest.

In addition to all other contractual rights or rights available at law or in equity, the HDSB may immediately disqualify a Submission or terminate the Contract upon giving notice to the Bidder where:

i. the Bidder fails to disclose an actual or potential Conflict of Interest;

ii. the Bidder fails to comply with any requirements prescribed by the HDSB to resolve a Conflict of Interest; or

iii. the Bidder's Conflict of Interest cannot be resolved.

This paragraph shall survive any termination or expiry of the Contract.

26. HDSB Confidential Information

For the purposes hereof, "HDSB Confidential Information" means all information of the HDSB that is of a confidential nature, including all confidential information in the custody or control of the HDSB, regardless of whether it is identified as confidential or not, and whether recorded or not, and however fixed, stored, expressed or embodied, which comes into the knowledge, possession or control of the Bidder in connection with the Contract. For greater certainty, HDSB Confidential Information shall:

(a) include:

(i) all new information derived at any time from any such information whether created by the HDSB, the Bidder or any third party;

(ii) all information (including Personal Information) that the HDSB is obliged or has the discretion not to disclose under provincial or federal legislation or otherwise at law; but

(b) not include information that:

(i) is or becomes generally available to the public without fault or breach on the part of the Bidder of any duty of confidentiality owed by the Bidder to the HDSB or to any third party;

(ii) the Bidder can demonstrate to have been rightfully obtained by Bidder without any obligation of confidence, from a third party who had the right to transfer or disclose it to the Bidder free of any obligation of confidence;

(iii) the Bidder can demonstrate to have been rightfully known to or in the possession of the Bidder at the time of disclosure, free of any obligation of confidence when disclosed; or

(iv) is independently developed by the Bidder;

but the exclusions in this subparagraph shall in no way limit the meaning of Personal Information or the obligations attaching thereto under the Contract or at law.

During and following the term of the Contract, the Bidder shall:

(a) keep all HDSB Confidential Information confidential and secure;

(b) limit the disclosure of HDSB Confidential Information to only those of its directors, officer, employees, agents, partners, affiliates, volunteers or subcontractors who have a need to know it for the purpose of carrying out its obligations under the Contract and who have been specifically authorized to have such disclosure;

(c) not directly or indirectly disclose, destroy, exploit or use any HDSB Confidential Information (except for the purpose of carrying out its obligations under the Contract or except if required by order of a court or tribunal), without first obtaining:

(i) the written consent of the HDSB; and

(ii) in respect of any HDSB Confidential Information about any third party, the written consent of such third party;

(d) provide HDSB Confidential Information to the HDSB on demand; and

(e) return all HDSB Confidential Information to the HDSB before the end of the Term, with no copy or portion kept by the Bidder.

27. Criminal Background Checks

The Bidder acknowledges that the HDSB must be in compliance with Regulation 521/01 of the Education Act (Ontario) - Collection of Personal Information with respect to criminal background checks and offence declarations. The Bidder covenants and agrees to assist the HDSB in complying with same by providing the HDSB, or such other entity as the HDSB may designate, with a criminal background check covering offences under the Criminal Code, the Narcotics Control Act, and any other offences which would be revealed by a search of the automated Criminal Records Retrieval System maintained by the RCMP or, in instances where the Bidder will have access to or is responsible for minors or vulnerable persons, a Vulnerable Persons Clearance certificate in addition to the above ("Criminal Background Check"), together with an Offence Declaration in HDSB approved form, for every individual or employee of the Bidder who may come into direct contact with students on a regular basis at a school site of the HDSB, or who may have access to student information.

For the purposes of this document, the HDSB shall determine in its sole and unfettered discretion whether an individual or employee of the Bidder may come into direct contact with students on a regular basis or may have access to student information. The Bidder agrees to indemnify and save harmless the HDSB from all claims, liabilities, expenses, and penalties to which it may be subjected on account of the Bidder's failure to provide a Criminal Background Check and an Offence Declaration, as aforesaid. This indemnity shall survive the expiration or sooner termination of the Contract. In addition, and notwithstanding anything else herein contained, if the Bidder fails to provide a Criminal Background Check and an Offence Declaration for an individual or employee of the

Bidder who may come into direct contact with students on a regular basis at a school site of the HDSB or who may have access to student information, then the HDSB shall have the right to forthwith terminate the Contract without prejudice to any other rights which it may have in the Contract, in law or in equity.

28. Debrief

The HDSB, at the written request of a Bidder will conduct a debriefing. Bidders must submit their request within sixty (60) days of Contract award notification. The HDSB will only identify any weaknesses or strengths in the Bidder's submission. No information regarding other Bidders' submissions will be disclosed. The intent of the debriefing information session is to assist a Bidder in presenting a better Submission in subsequent procurement opportunities. Any debriefing provided is not for the purpose of providing any opportunity to challenge the procurement process.

29. Dispute Resolution

In the event that a Bidder wishes to review the decision of the HDSB in respect of any material aspect of the RFT process, and subject to having attended a debriefing, the Bidder shall submit a protest in writing to the RFT Authority within ten (10) days from such a debriefing.

Any request that is not received in a timely manner will not be considered, and the Bidder will be notified in writing.

A protest in writing shall include the following:

(a) a specific identification of the provision and/or procurement procedure that is alleged to have been breached;

(b) a specific description of each act alleged to have breached the procurement process;

(c) a precise statement of the relevant facts;

(d) an identification of the issues to be resolved; and

(e) the Bidder's requested remedy.

For the purpose of a protest, the HDSB will review and address any protest in a timely and appropriate manner. HDSB's decision in this regard is final.

30. Environmental Statement

The Board, when practically and financially feasible, will consider the acquisition of goods and services that will reduce the environmental footprint of the Board.

31. Force Majeure

Delays in or failure of performance by either party under the Contract shall not constitute default thereunder or give rise to any claim for damages if caused by occurrences beyond the control of the party affected, including but not limited to, decrees of Governments, acts of God, fires, floods, riots, wars, rebellion, sabotage, and atomic or nuclear incidents. Lack of finances, strikes, lockouts or other concerted acts by workers shall not be deemed to be a cause beyond a party's control.

In the event that performance of the Contract in the reasonable opinion of either party is made impossible by an occurrence beyond the control of the party affected, then either party shall notify the other in writing. The HDSB shall either terminate the Contract forthwith and without any further payments being made, or authorize the Bidder to continue the performance of the Contract with such adjustments as may be required by the occurrence in question and agreed upon by both parties. In the event that the parties cannot agree upon the aforementioned adjustment, it is agreed by the parties that the Contract shall be terminated.

32. Guarantees and Warranties

All Work shall be done in a good and workmanship like manner. All materials, goods and services must meet the applicable specifications, either by the HDSB, its consultant on the project or the manufacturer. The Bidder warrants and guarantees that all materials, Goods; Services and workmanship will be free from defects and fit for the purpose intended by the HDSB. All Goods delivered by the Bidder must be new, in good working order and of the latest model possessing all accessories standard to the manufacturer's stock model. The Goods and/or Services must be covered by written guarantees and warranties acceptable to the HDSB.

33. Health & Safety / WHMIS

Bidders and/or contractors must comply with the Occupational Health and Safety Act and its regulations. All Bidder's contractors and sub-contractors and their respective employees will have received health and safety training appropriate to their trade, and will be able to provide proof thereof to the HDSB upon request. Contractors shall be held responsible for any sub-contractors where such are permissible by the HDSB. The HDSB may request and suppliers/contractors/sub-contractors will provide evidence of such training at any time.
Suppliers/contractors/sub-contractors shall comply with the HDSB policies, programs and procedures at all times while on site. All suppliers/contractors/sub-contractors are

required to sign in upon arrival/exit at a HDSB location prior to beginning and at completion of Work.

Suppliers and/or contractors/sub-contractors shall be held responsible for all fines and/or contraventions of legislation which have been incurred by the HDSB.

As per Ontario regulation 278/05 section 10 (5) the HDSB will provide contractors/sub-contractors performing work in HDSB buildings access to the site specific asbestos inventory. Site specific asbestos inventories are available at each HDSB site. Contractors/sub-contractors shall review the site specific asbestos inventory in relation to the scope of work they are undertaking, prior to the commencement of work. The requirements of the HDSB's Asbestos Management Administrative Procedure are to be adhered to at all times. A copy of the HDSB's Asbestos Management Administrative Procedure can be found at:

http://www.hdsb.ca/our-board/Policy/AsbestosManagementInFacilities.pdf.

All Work is subject to prior approval by the appropriate HDSB department.

Contractors shall examine carefully the HDSB's Asbestos Register for the Work site, in addition to examining existing conditions for suspected Asbestos Containing Materials (ACM), on which completion of Work is dependent.

Upon discovery of unforeseen suspected ACM affecting completion of the Work, the Contractor shall cease any operations that may disturb said materials and notify the Owner immediately.

The Contractor shall arrange for removal of ACM affecting completion of Work through a HDSB-approved ACM abatement contractor, and arrange for coordination of testing through HDSB Facility Services, if required.

Contractors shall be responsible for any sub-contractors in their employ with respect to the aforementioned requirements.

34. Indemnification and Liability

The Bidder hereby agrees to indemnify and hold harmless the HDSB, its directors, officers, trustees, employees and agents from and against all liability, loss, costs, damages and expenses (including legal, expert and consultant fees), causes of actions, actions, claims, demands, lawsuits or other proceedings, by whomever made, sustained, incurred, brought or prosecuted if:

(a) resulting from the Bidder's failure to observe and conform to the standards established by law or by any other association which has established standards recognized by the Province of Ontario;

(b) relating to labour and equipment furnished for the Work; and
(c) involving inventions, copyrights, trademarks or patents, and rights thereto, used in doing the Work and in the subsequent use and operation of the Work or any part thereof upon completion.

35. Insurance and Liability

The successful bidder must indemnify the HDSB from any and all manner of damage or injury, risk, claims, demands, actions, penalties, causes of action, damages and any and all costs arising out of, or incurred by reason of provision of goods and/or services by the bidder. The cost of such insurance will be the responsibility of the Bidder.

The successful bidder(s) will obtain and provide current proof of insurance upon the award, that the successful Bidder will be covered by:

at least Two Million Canadian Dollars (C$2,000,000.00) of comprehensive commercial general liability insurance
for bodily injury, property damage, operations liability, contractual liability and tenant's legal liability, including umbrella liability insurance covering liability arising from premises, operations, independent contractors, products-completed operations, personal injury and liability assumed under the Contract;

at least One Million Canadian Dollars (C$1,000,000.00) of business automobile liability insurance and, if necessary, umbrella liability insurance for owned, hired and non-owned vehicles covering bodily injury and property damage: and With an insurer licensed to carry on business in the Province of Ontario.

In the case of multi-year contracts, a copy of a valid certificate must be provided to the Halton District School HDSB annually thereafter, at least thirty (30) days prior to the anniversary date of the contract commencement date. At commencement of the Contract and throughout the Contract duration, certification shall be submitted on a Certificate of Insurance form with the above-mentioned coverage, thereby protecting the Halton District School Board against claims for property damage and bodily injuries, including accidental death, caused by the successful Bidder(s) or its employees and/or Sub-contractors during the performance of its obligations under the Contract.

The Halton District School Board must be named as additional insured, and the policy must contain a cross liability clause, and thirty (30) day prior notice clause of any cancellation, non-renewal or product change in coverage, terms or conditions.
As a condition precedent to contract award, Certificates of all such insurance policies shall be filed with the HDSB by the successful Bidder and shall be subject to the HDSB's approval as to the adequacy of protection.

All the above-mentioned insurance shall be maintained until the HDSB certifies that the work is complete.

36. Invoicing/Payment/EFT

To ensure that payment is not deferred, the following information shall be on all invoices:

- Bidder's Name or Business Number, Address, Telephone Number and HST registration number
- Invoice Date
- Invoice Number
- Purchase Order Number, Name of Requester, Shipment Destination
- Name of Halton District School Board staff that issued this order
- Complete Good/Service Description (including hourly rates, service/delivery dates, service location)
- Attach Copy of Service Report/Work Order Completed
- Terms of payment
- Total of HST where applicable
- Total Amount Payable

The HDSB's method of payment is by Electronic Funds Transfer (EFT). If the Bidder is a new vendor or current vendor who has not previously utilized the EFT payment service or has banking information which has changed, then an "Application of Vendor Direct Deposit" form is required to be completed, which is available through the Purchasing contact for this document. This form along with a voided cheque or letter from the Bidder's bank should be sent to:

Halton District School Board
Attention: Accounts Payable Department
J.W. Singleton Centre,
PO Box 5005 Stn LCD 1,
Burlington ON L7R 3Z2 or

electronically to: apeft@hdsb.ca before any invoices are submitted to the HDSB for payment.

Payment terms are Net 28. Early payment discounts may be considered.

37. Irrevocability

The Submission will be open for acceptance by the HDSB and irrevocable by the Bidder for a period of one hundred and twenty (120) calendar days from the Closing Date.

38. Municipal Freedom of Information and Protection of Privacy Act ("MFIPPA")

(a) The Bidder acknowledges and agrees that the HDSB is subject to MFIPPA. The Bidder further expressly acknowledges and agrees that, upon the acceptance of a successful Submission and conclusion of this process (including execution and delivery of the Contract between the HDSB and the successful Bidder), subject to subsection (b) below, the Submission shall not be considered confidential for the purposes of Section 10 of MFIPPA and, in the event of an access request or at the discretion of HDSB, shall be subject to release in its entirety without redaction.

(b) Notwithstanding paragraph (a) above, the Bidder and the HDSB acknowledge and agree that the information listed below is considered to be supplied by the Bidder to the HDSB in confidence:

1. For Services: Hourly rates/fees and information from which such rates/fees could be reasonably deduced.

2. For Goods: Unit costs and information from which such unit costs could be reasonably deduced.

(c) Notwithstanding the foregoing, the Bidder acknowledges and agrees that, because the HDSB is subject to MFIPPA, all or part of any Submission, including information supplied in confidence, may be subject to release in response to an access request submitted pursuant to MFIPPA. In the event that the HDSB receives a request for access to all or part of a Submission supplied in confidence, the HDSB shall deliver the relevant notice to the Bidder , who shall bare all costs, legal or otherwise, with respect to any objection the Bidder may have in respect of the release of any or all parts of the Submission pursuant to MFIPPA.

39. No Guarantee of Work or Exclusivity of Contract

The HDSB makes no guarantee of the value or quality of goods or services or volume of work to be assigned to the successful Bidder. Any Contract executed with a successful Bidder may not be an exclusive Contract for the provision of the requested Goods or Services. Quantity where specified more or less, are estimates of previous consumption and are furnished without liability to the HDSB.

40. Non-Performance/Termination of Contract

If the Bidder delivers substandard, unapproved or defective items, which are rejected by the HDSB, the Bidder agrees to replace these items at the Bidder's expense with items of a quality deemed acceptable to the HDSB within a 48-hour period of the mutual satisfactory agreement being reached. If the Bidder fails to replace the items within this 48-hour period, the parties agree that the HDSB may purchase substitutes for the rejected items in the open market at no additional cost or liability to the HDSB.

Where at any time the quality of the Goods or Service supplied by the successful Bidder is not of a satisfactory standard, the HDSB may issue a verbal warning outlining the deficiency in supply or other aspects of performance and requiring the successful Bidder to correct those deficiencies within such period of time as stated. If the deficiency is not corrected within the time specified, or having been corrected, there is a further instance of deficient performance, the HDSB may issue a written notice to the successful Bidder, identifying the deficiency in performance and setting a final date or time period for its correction, and advising that if corrective steps are not taken by that date or within that time, the HDSB may terminate the Contract and take corrective action itself.

Until the HDSB is satisfied that the unsatisfactory performance has been corrected, the HDSB may hold back from any payment an amount sufficient to rectify the unsatisfactory performance until its requirements have been met.

The HDSB reserves the right, in its absolute discretion, to terminate a Contract immediately without penalty, costs or damages of any kind whatsoever, where the Bidder has violated any laws or performed any of the following acts while performing work with the HDSB and further reserves the right to take that failure into account with respect to the award of any future contract.

a) over-billing or duplicate billing;

b) splitting of invoices;

c) charging for items not supplied;

d) charging for items not approved prior to invoicing;

e) charging for items of one grade, while supplying items of an inferior grade;

f) Misrepresentation as to the quality or origin of goods, their functionality or suitability for a purpose, or their performance characteristics;

g) not responding to the HDSB or, failure to complete contract.

41. Ownership

The Submission, along with all correspondence, documentation and information provided to the HDSB by any Bidder in connection with or arising out of the Submission, once received by the HDSB, shall become the property of the HDSB and may be appended to any Contract and/or purchase order with the successful Bidder.

42. Permits, Licenses and Approvals

Bidders shall obtain all permits, licences and approvals required in connection with the supply of the Goods and/or Services. The costs of obtaining such permits, licences and approvals shall be the responsibility of, and shall be paid for by the Bidder.

Where a Bidder is required by any Applicable Law to hold or obtain any such licence, permit, or approval to carry on an activity contemplated in its Submission or in the Contract, neither the acceptance of the Submission nor the execution of the Contract by the HDSB shall be considered an approval by the HDSB for the Bidder to carry on such activity without the requite licence, permit, consent or authorization.

Without in any way limiting the generality of the foregoing, any electrical Goods being proposed for consideration pursuant to this RFT must be authorized or approved in accordance with the Electrical Safety Code or by a certification organization accredited with the Standards Council of Canada Act (Canada), and shall bear the certification organization's mark identifying the Goods certified for use in Canada. Certification shall be to the standard that is appropriate for the intended use of the electrical Goods at any of the HDSB's schools or facilities.

43. Co-operative Purchasing Provisions

This document is being issued by the HDSB to meet the HDSB's requirements. The successful Bidder acknowledges that the Provincial Government encourages cooperative procurement initiatives by School HDSBs. Bidders shall indicate on the Form of Quotation if they are willing to extend pricing and submission terms to other District School Boards in the province of Ontario where the scope of work is deemed similar or the same and where both parties are in agreement, in which case they shall be deemed to have granted consent to the HDSB to share the Submission with such HDSBs, subject to such HDSBs agreeing to receive the Submission in confidence on the understanding that the Submission contains financial, commercial, technical and other sensitive information of the Bidder. The Bidder will not be penalized if it does not agree to this provision. The HDSB will not incur any financial responsibility in connection with any purchase by another School Board. Each School Board shall accept sole responsibility for its own contract management such as placing orders and making payments to the successful Bidder.

44. Proof of WSIB Coverage

If the Bidder is subject to the Workplace Safety and Insurance Act ("WSIA") or the Workplace Safety and Insurance Amendment Act, 2008 ("WSIAA"), the Bidder shall submit a valid clearance certificate of Workplace Safety and Insurance Board ("WSIB") coverage to the HDSB before commencing the performance of any work or services. In addition, the Bidder shall, from time to time during the term of the Contract and at the request of the HDSB, provide additional WSIB clearance certificates. The Bidder covenants and agrees to pay when due, and to ensure that each of its subcontractors

pays when due, all amounts required to be paid by it or its subcontractors, from time to time during the term of the Contract, under the WSIA and/or the WSIAA, failing which the HDSB shall have the right, in addition to and not in substitution for any other right it may have pursuant to the Contract or otherwise at law or in equity, to pay to the WSIB any amount due pursuant to the WSIA or the WSIAA unpaid by the Bidder or its subcontractors and to deduct such amount from any amount due and owing from time to time to the Bidder pursuant to the Contract together with all costs incurred by the HDSB in connection therewith.

45. Right to Withdraw

Submissions may be withdrawn prior to the Closing Time. Following Closing, no Submission may be withdrawn. Any Bidder who attempts to do so may have a negative Performance Evaluation placed on record with the HDSB in accordance with the Vendor Performance Management Administrative Procedure

(www.hdsb.ca/our-board/Policy/VendorPerformanceManagement.pdf)

46. Smoking on HDSB Property

Smoking of any substance and in any manner is prohibited in all HDSB buildings and on all HDSB property. This includes, without limitation, tobacco, cannabis in any form and vaping.

47. Vehicle Operation on HDSB Property

The successful Bidder shall use due care and caution when motorized vehicles are in operation on school property while students are expected to enter or exit the school building and/or are visible outside the school building on school property or adjacent property, particularly during recess, lunch period and preceding and following the end of the school day. Vehicles operated in parking lot and driveway areas shall not be driven at a speed in excess of 8-kilometers/per hour.

Further, on school property drivers must turn off vehicles and remove the keys during any stop. At no time are vehicles to be left running while unattended. It is recommended that the vehicle be locked when left unsupervised. The HDSB will not be responsible for any theft of, or any theft from, vehicles operated by the successful Bidder.

Asphalt play areas around the exterior of the school building are not constructed to handle heavy vehicles. Bidders will be held responsible for any damage to HDSB property including but not limited to asphalt or natural surfaces as a result of using them for access of heavy vehicles. Making good of natural surfaces or asphalt areas that are damaged in the course of the work shall be to the original (new) condition irrespective of their condition prior to commencement of the work, or the condition of the adjacent unaffected areas. Vehicles are only permitted to access, stand or be parked in areas designated by administrative staff of HDSB, which for the purposes of this provision does not include principals of schools.

48. Bidder Conduct

When on HDSB property, the Bidder and its employees must:

- have proper identification (name badge, uniform with logo, photo I.D. etc).
- be dressed appropriately (the following are not appropriate: clothing that fails to contain the anatomy when the person is carrying out normal duties; clothing with printed slogans, advertising or designs that are obscene or could have a double meaning).
- use appropriate language.
- refrain from wearing scented products or fragrances such as perfume, cologne, after shave, shampoos (as required).
- work with dignity, courtesy and respect for self and others.
- not make noise or move in corridors during morning announcements, and playing of the national anthem.
- observe procedures during fire evacuation and lockdowns, whether they are actual or test (drills).
- park in spots designated by the Principal.

The Bidder must observe all HDSB policies and procedures including but not limited to: Smoke-Free Environment; Sexual, Racial and Ethno Cultural Harassment, etc.

The Bidder will ensure that the education program is not interrupted and that the health and safety of the students and staff is not compromised.

No person who is impaired by alcohol or drugs will enter and/or remain on HDSB property.

The Bidder agrees that its employees and sub-contractors will observe and comply with all standards, procedures, policies, rules and regulations of the HDSB, including but not limited to privacy, use of facilities, equipment, building security and computer technology.

Halton District School Board

FORM OF TENDER

Project: Door Replacement – Harrison PS
Project Reference #: RFT 20-187

From(Bidder):_____
Company Name

Street Address

City, Province and postal code

Phone Number Email Address

To (Owner): Halton District School Board
2050 Guelph Line
Burlington, Ontario L7P 5A8

We, the undersigned, having examined the Tender Documents for the above-named Project, including Addendum, hereby offer to perform the Work in accordance with the Tender Documents, for the Stipulated Price of:

A - Base Bid Amount	$
B - Cash Allowance – Door Hardware	$ 40,000
C – Contingency	$ 10,000
Sub-Total A+B+C (Exclusive of Taxes)	**$**

We, the undersigned, declare that:

a. We agree to perform the Work within the required completion time specified in the Tender Documents,
b. We have arrived at the Tender without collusion with any competitor,
c. This Tender is open to acceptance by the Owner for a period of 90 days from the date of Tender Closing,
d. All Form of Tender supplements called for by the Tender Documents from an integral part of this Tender.

Signature: _____ _____
LEGAL NAME OF BIDDER DATE

_____ _____ _____
AUTHORIZED SIGNATURE OF BIDDER & TITLE PRINTED NAME
I have the authority to bind the Bidder

SEAL

Halton District School Board

APPENDIX A - DECLARATION SIGNATURE SHEET

1. I/WE DECLARE that this Submission is made without collusion, knowledge, and comparison of figures or arrangement with any other company, firm or person submitting a Submission for the same work.

2. I/WE DECLARE that to our knowledge no member of Halton District School Board is, will be or has become financially interested, directly or indirectly, in any aspect of the Contract other than in the appropriate discharge of his/her obligations as an employee/officer of Halton District School Board.

3. I/WE HAVE READ, Understood and agree to abide by the Agreement to Abide by the Established Process.

4. I/WE HAVE CAREFULLY examined the RFT documents, and have a clear and comprehensive knowledge of what is being requested hereunder. By submitting the Submission, the Bidder agrees and consents to the administrative procedures of the Board, as well as the procedures, terms, conditions and provisions of the RFT, including the Form of Tender.

5. I/WE have carefully examined all of the Proposal Documents, and that we have thoroughly reviewed all proposal documentation and addenda number _____to_____, and hereby accept and agree to same as forming part and parcel of the proposed Contract.

6. I/WE ARE AUTHORIZED BY and have the authority to bind the Bidder.

DATE:_____

NAME:_____
Please Print

SIGNATURE:_____

TITLE:_____

COMPANY NAME:_____

ADDRESS:_____

PHONE NUMBER: _____

E-MAIL ADDRESS:_____

E-MAIL to Send PO: _____

Scope of Work:

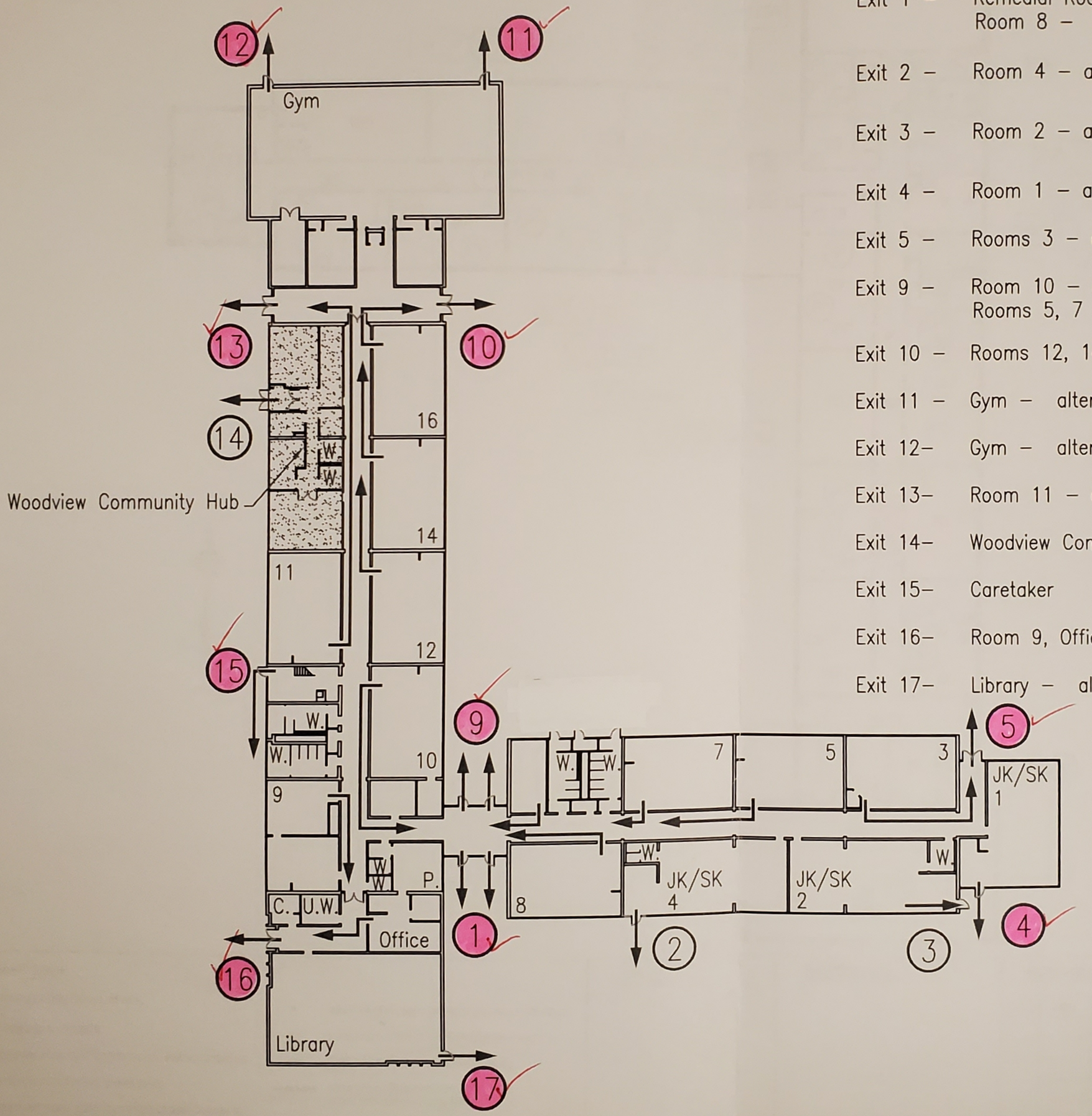
Provide all necessary labour, material and equipment required to remove and dispose existing Doors, frames, panels and section and Provide new doors, frames and elevations and associated hardware as specified herein.

Contractor shall refer to Grguric Architects Specifications and drawings and, Arcadis Designated Substance survey and Asbestos Abatement Specifications for specific details.

Contractor shall carry the following cash allowances – total $40,000 (see tender form.

Contractor shall carry the following Contingency allowances – total $10,000 (see tender form}:

All construction work is intended to be completed by November 30, 2020 subject to Building permit. All work after September 1, 2020 shall be completed during unoccupied school scheduled times unless approved by local school administration and Project Leader.



Exit 1 – Remedial Room – alternate 15
Room 8 – alternate 5

Exit 2 – Room 4 – alternate 5

Exit 3 – Room 2 – alternate 5

Exit 4 – Room 1 – alternate 5

Exit 5 – Rooms 3 – alternate 1

Exit 9 – Room 10 – alternate exit 10
Rooms 5, 7 – alternate exit 5

Exit 10 – Rooms 12, 14, 16 – alternate 9

Exit 11 – Gym – alternate 10

Exit 12– Gym – alternate 10

Exit 13– Room 11 – alternate exit 16

Exit 14– Woodview Community Hub

Exit 15– Caretaker

Exit 16– Room 9, Office – alternate exit 9

Exit 17– Library – alternate 15

Scale

5 0 1 2 3 4 5 10 15 20
METRES

5 0 3 10 20 30 40 50
FEET

Harrison Public School

9 OCTOBER 2019
25 SEP 2019
JK-5
1"=60'-0"
RDZ
20 NOV 2019
1650
29466 (2737m²)
Harrison

FIRST FLOOR PLAN

HORIZONTAL EXITS

A | 1

SPECIFICATIONS

SECTION NUMBER		# PAGES
	HALTON DISTRICT SCHOOL BOARD - Front End Documents	
	DIVISION 1 – GENERAL REQUIREMENTS	
00010	List of Contract Documents	1-1
01005	General Instructions	1-7
01020	Cash Allowances	1-2
01340	Shop Drawings, Product Data & Samples	1-2
	DIVISION 2 – SITE WORK	
02050	Demolition	1-3
	DIVISION 7 - THERMAL & MOISTURE PROTECTION	
07900	Sealants	1-3
	DIVISION 8 - DOORS & WINDOWS	
08100	Commercial Steel Doors and Frames	1-14
08800	Glazing	1-2
	DIVISION 9 - FINISHES	
09900	Painting	1-4

DRAWINGS NO.	DESCRIPTION
	ARCHITECTURAL DRAWINGS
A1.00	Door Schedule, Door and Frame Types, and Details

End of Section

1. Definitions

1. The following Section of this Specification are of the abbreviated type and include incomplete sentences. Definite and indefinite articles have often been omitted and sentences are written in the form of direct instructions to the Contractor without using the phrase `the Contractor shall.' Standard specifications and other quality references inserted govern materials and workmanship without using phrases `conform with,' `conformity therewith,' etc. Omitted words and phrases to be supplied in the same manner as they are when a note appears on the Drawings.

2. The Specifications are separated into Sections for reference convenience only. Such separation must in no instance make Owner or his Consultants arbiter to establish subcontract limits between Contractor and Subcontractor.

3. Provide all items, articles, materials, operations or methods listed, mentioned or scheduled on Drawings and/or in Specifications, including all labour, materials, equipment, tools, services, and incidentals necessary and required to complete the work. Responsibility for breakdown into and extension of subcontracts, including co-ordination of same, rests entirely with the Contractor.

4. Standard Specifications referred to are editions in force at Tender Closing Date.

2. Terminology

1. Consultants are the team of Architects, Engineers and other experts commissioned by the Owner, directly or indirectly, to execute design, contract documents and supervision for the project, including any of their agents or employees.

2. Prime Consultant is the Architect.

3. Contractor is the Firm or Corporation who, having signed the Agreement, has the sole legal responsibility to carry out the work shown or described in the Contract Documents for the Owner, whether contractually assigned to a Subcontractor or supplier, or not.

3. Minimum Standards

1. Unless otherwise specified, work and material to conform or exceed the minimum standards set out in the editions of the Canadian Government Specification Board, Canadian Standards Associations, the Ontario Building Code, Underwriters' Laboratories of Canada, the Canadian Electrical Code, the Local Building Code in force, whichever is applicable.

2. Copies of Standard Specifications referred to in this Specification to be kept on the site.

3. The use of the name (or its abbreviation) of any of the following bodies, accompanied by the reference number of a specification of that body to mean that the entire specification of the body to apply as noted:

    AISC: American Institute of Steel Construction;
    ASTM: American Society for Testing Materials;

CEC: Canadian Electric Code;
CGSB: Canadian Government Specification Board;
CISC: Canadian Institute of Steel Construction;
CRCA: Canadian Roofing Contractors' Association;
CSA: Canadian Standards Association;
OBC: Ontario Building Code;
ULC: Underwriters' Laboratories of Canada;
CLA: Canadian Lumbermen's Association.

4. Cooperation

1. Each trade to cooperate with the trades of adjacent or affected work. Supply in good time requirements effecting adjacent and underlying work in writing and items to be set or built in. Similarly, heed requirements and build-in items provided by other trades.

2. Take necessary precautions to protect work of other trades from contamination, marring or other damage due to application or installation processes, methods and activities.

3. General Contractor and each trade to cooperate with Contractors which may be assigned or selected by the Owner to perform work under Cash Allowances. Owner reserves the right to assign nonunionized labour to perform work under Cash Allowances, at Owners discretion.

5. Coordination

1. Coordinate the work of all trades in such a manner that each trade co-operates with the trade of adjacent work.

2. Organize weekly job site meetings and send out notices stating time and place to Consultants, subcontractors, Suppliers and all others whose presence is required at the meetings.

3. Take note of all persons attending these meetings and submit to Consultants and Owner, Minutes of these Meetings showing any major decisions made and instructions or information required.

4. Coordinate the Work in this Contract with the work of others awarded work under Cash Allowances.

6. Building Dimensions and Co-ordination

1. Ensure that all necessary job dimensions are taken and all trades are coordinated for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions, and for coordination.

2. Verify that all work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent work, as set out by requirements of the drawings, and ensure that work installed in error is rectified before construction resumes.

3. Check and verify all dimensions referring to the work and the interfacing of all services. Verify all dimensions, with the trade concerned when pertaining to the work of other trades. Be responsible to see that Subcontractors for various trades co-operate for the proper performance of the Work.

4. Avoid scaling directly from the drawings. If there is ambiguity or lack of information, immediately inform the Consultant. Be responsible for any change through the disregarding of this clause.

5. All details and measurements of any work which is to fit or to conform with work installed shall be taken at the building.

6. Advise Consultant of discrepancies and if there are omissions on drawings, particularly reflected ceiling plans and jointing patterns for paving, ceramic tile, or carpet tile layouts, which affect aesthetics, or which interfere with services, equipment or surfaces. DO NOT PROCEED without direction from the Consultant.

7. Ensure that each Subcontractor communicates requirements for site conditions and surfaces necessary for the execution of the Subcontractor's work, and that he provides setting drawings, templates and all other information necessary for the location and installation of material, holes, sleeves, insets, anchors, accessories, fastenings, connections and access panels. Inform other Subcontractors whose work is affected by these requirements and preparatory work.

8. Prepare interference drawings to properly co-ordinate the work where necessitated. Refer to Section 01340.

7. Use of Premises Before Substantial Performance

1. The Owner shall have the right to enter and occupy the building, in whole or in part, for the purpose of placing fittings and equipment, or for other use, before completion of the Contract if, in the opinion of the Consultant, such entry and occupancy does not prevent or interfere with the Contractor in the performance of the Contract. Such entry shall in no way be considered as an acceptance of the Work in whole, or in part, nor shall it imply acknowledgment that terms of the Agreement are fulfilled.

8. Layout of Work

1. Layout work with respect to the work of all trades. Arrange mechanical and electrical work such as piping, ducts, conduits, panels, equipment and the like to suit the architectural and structural details.

2. Alterations necessary due to conflict and interference between trades, to be executed at no cost to the Owner unless notification is given in writing before Tender Closing Date.

9. By-Laws and Regulations

1. Nothing contained in the Drawings and Specifications are to be so construed as to be knowingly in conflict with any law, by-law or regulation of municipal, provincial or other authorities having jurisdiction.

2. Perform work in conformity with such laws, by-laws and regulations and make any necessary changes or deviations from the Drawings and Specifications subsequently required as directed and at no cost to the Owner unless notification is given in writing before Tender Closing Date.

3. Furnish inspection certificates and/or permits as may be applicable as evidence, that installed work conforms with laws, by-laws, and regulations of authorities having jurisdiction.

10. Protection

1. Take necessary precautions and provide and install required coverings to protect material, work and finishes from contamination, damage, the elements, water and frost.

2. Make good any damage or replace damaged materials, as directed. Repairs to be made by the trade having originally installed or fabricated the damaged material, finish or item. Protect electrical equipment from water and the elements.

3. Protect adjacent private and public property from damage and contamination.

4. Protect curbs and sidewalks from damage from trucking by means of boards and the like. Repair, or pay or repair of damage to existing roads and sidewalks.

5. Mark glass after glazing in an acceptable manner, and leave in place until final clean-up.

6. Protect floor finishes from construction traffic and transport of construction materials and equipment by means of 6 mm plywood panels.

11. Delivery, Handling and Storage of Materials

1. Schedule material delivery so as to keep storage at site to the absolute minimum, but without causing delays due to late delivery.

2. Store materials which will be damaged by weather in suitable dry accommodation. Provide heat, as required, to maintain temperatures recommended by material manufacturer.

3. Store highly combustible or volatile materials separately from other materials, and under no circumstances, within the building. Protect against open flame and other fire hazards. Limit volume of supply on the site to minimum required for one day's operations.

4. Handle and store material so as to prevent damage to material, structure and finishes. Avoid undue loading stresses in materials or overloading of floors.

5. Do not store material and equipment detrimental to finished surfaces within areas of the building where finishing has commenced or has been completed. All material storage within the building is subject to relocation, as directed.

6. Deliver package material in original, and Storage of unopened and undamaged containers with manufacturer’s labels and seals intact.

12. Debris

1. Assign clean-up duties to a crew with own Foremen which will be of sufficient size to prevent accumulation of debris and dirt in any part of the structure or on the site.

2. Remove construction debris on a daily basis and legally dispose of same.

3. Under no circumstances, should debris, rubbish or trash be burned or buried on the site.

13. Cutting, Fitting and Patching

1. Required cutting to be done by General Contractor. Patching and painting of work to be executed by the General Contractor.

2. All sub-trades are to notify the General Contractors bidding as to the extent of the cutting, patching, and painting of their respective trades.

3. Drilling, cutting, fitting and patching necessary due to failure to deliver items to be built-in time, or installation in wrong location to be executed, as directed, at no cost to the Owner.

4. Give written notification prior to commencement of drilling and cutting of load bearing structural members and finished surfaces.

5. Cut holes with smooth, true, clean edges, after they are approved by applicable trade. Size holes and openings for hot water and steam pipes, so as to allow for expansion and contraction of such pipes.

14. Fastenings

1. Supply all fastenings, anchors and accessories required for fabrication and erection or work.

2. Metal fastenings to be of the same material as the metal component they are anchoring, or of a metal which will not set up an electrolysis action which would cause damage to the fastening or metal component under moist conditions.

3. Exposed metal fastenings and accessories to be of the same texture, color, and finish as base metal on which they occur. Keep to a minimum; evenly space and lay out.

4. Fastenings to be permanent, of such a type and size and installed in such a manner to provide positive anchorage of the unit to be secured. Wood plugs are not acceptable. Install anchors at required spacing to provide required load bearing or shear capacity.

5. Power actuated fastenings not to be used without prior written approval for specific use.

15. Surplus Materials

1. Surplus materials specifically so specified, to remain property of the Owner and be neatly stockpiled or stored, as directed.

2. All other surplus materials to become property of the Contractor; to be removed from the site and legally disposed of.

16. Documents Required and General Duties

1. **At Commencement of Contract**

   .1 Supply Public Liability and Property Damage Insurance Certificates.
   .2 Supply Certificates of good standing from Workers' Compensation Board for the General Contractor and all Subcontractors.
   .3 Supply Contract Sum Breakdown of all sub-trades or parts of work and general expense items.
   .4 Supply Construction Schedule.
   .5 Supply Schedule of Shop Drawing Submissions.
   .6 The Owner has paid for the cost of the Building Permit. Mechanical Subcontractor will pay the cost of other Fees related to the Work Specified under Division 15. Electrical Subcontractor will pay the cost of all permits and fees related to the Work Specified under Division 16.
   .7 The General Contractor is to pay all other fees and refundable deposits if applicable.

2. **During Construction**

   .1 Adjust Allowances, as required.
   .2 Organize Job Meetings.
   .3 Supply Monthly Progress Reports and Construction Schedule.
   .4 Confirm that payments are being made to subcontractors and suppliers by submission of receipts with the second and subsequent Progress Payment Application. No payment will be made for unincorporated material on the site, unless Bill of Sale in proper format is provided.

3. **Upon Completion**

   .1 Upon completion of work before the Final Certificate of Payment is issued, the following to be observed, executed and submitted:
      .1 All deficiencies to have been completed in a satisfactory manner.
      .2 All final clean-up to have been executed.
      .3 Finishing Hardware, Inspection and Verification.
      .4 Organize a Final Inspection tour at which to be present:
         - the Owner's authorized representative;
         - the Architectural, Structural, Mechanical and Electrical Consultants, and their supervisory personnel, if any;
         - the Contractor and his superintendent.
      .5 Where the above procedure is impossible or where any deficiencies remain outstanding, the Owner's representative and the Consultant concerned, to inspect and accept the affected work and/or material upon notification by the Contractor, that all deficiencies involving this Consultant have been made good.
      .6 A complete release of all liens arising out of this Contract, other than his own. If a subcontractor or supplier refuses to furnish a release of such a

lien, furnish a bond satisfactory to the Owner to indemnify him against any claim under such a lien.

.7 Certificates of good standing from the Workers' Compensation board, for the General Contractor and all Subcontractors.

.8 Certificate of Inspection from Mechanical and Electrical Engineers.

.9 Copies of all Lists of Deficiencies with each Deficiency verified when complete by only this project's job Superintendent. The Final List of Deficiencies to be signed, completed by all concerned, if accepted.

.10 Statement of Completion from General Contractor.

.11 Final adjustment of all Allowances.

.12 H.E.P.C. Inspection Certificate and all other Inspection Certificates required by Provincial, Municipal and other authorities having jurisdiction.

.13 Balancing Reports.

.14 As-Built Drawings - Hardcopy mark ups and digital pdf.

.15 Two hard copies of Operation and Maintenance Manuals. A digital copy (pdf file) of all closeout documents to be provided on a CD or USB memory stick format.

17. Progress Reports

1. Submit to the Architect, Monthly Progress Reports consisting of a concise narrative and a marked-up summary schedule showing physical percentage complete by item and in total. These progress calculations must agree with the Progress Payment Claims.

2. Keep permanent written daily records on the site on the progress of work. Record to be open to inspection at reasonable times and copies to be furnished upon request. Records to show notes of commencement and completion of different trades and parts of work; daily high and low temperatures and other weather particulars; number of men engaged on the site (including sub-trades) broken down in groups for each type of construction work, and particulars about excavation and shoring; erection and removal of form work; pouring and curing of concrete; floor finishing; placing and compaction of backfill, masonry work; roofing;

3. Daily progress to give particulars on commencement and completion of each trade or part of work; form work erections and removal; concrete pouring and curing; floor finishing; masonry work; roofing; waterproofing; finishing trades, tests and inspection and the like.

End of Section

1. Selection of Products

1. If requested by the Consultant, provide the following services and/or information:

   .1 Assist the Consultant in determining qualified suppliers.
   .2 Obtain proposals from suppliers.
   .3 Make appropriate recommendations for consideration of Consultant.
   .4 Notify Consultant of any effect anticipated by selection of product or supplier under consideration, on construction schedule and contract sum.

2. On notification of selection, enter into purchase agreement with designated supplier.

2. Cash Allowance

1. Expend cash allowance only on the Consultant's written instructions.

2. Include in Contract price the Contractor's charges for handling at site, including uncrating and storage, protection from elements and damage, labour, installation and finishing, testing, adjusting and balancing, and other expenses including overhead and profit on account of Cash Allowance in accordance with HDSB general conditions.

3. Credit the Owner with any unused portion of Cash Allowances in the statement for final payment.

4. If a test made under payment by a specific allowance proves that the material or system is not in accordance with the Documents, then the subsequent testing including Owner's testing of replacement materials or systems shall be Contractor's expense and not taken from Cash Allowance.

5. Add or deduct any variation in cost from the Cash Allowance. No adjustment will be made to Contractor's expense.

6. The amount of each allowance includes the net cost of the product or service, delivery and unloading at the site.

7. All refunds, trade and/or quantity discounts which the Contractor may receive in the purchase of goods under allowances, to be extended to the Owner.

8. Receipted invoices covering all disbursements made by the Contractor under Allowances, to be submitted to the Consultant for audit.

9. Where the Cash Allowance stipulates "Supply Only," the Contract Price and not the Cash Allowances include the installation and hook-up costs. The installation and hook-up of some equipment and materials are specified under other Sections of the Specifications. The General Contract includes the installation and hook-up not specified elsewhere.

10. Contractor's profit and overhead on all Cash Allowances to be carried in his lump sum amount, not in the Cash Allowances.

11. All Cash Allowances will be dealt with in accordance with HDSB General Conditions. All expenditures under Cash Allowances, must be approved by the Owner.

12. Include in the Stipulated Price quoted, a Cash Allowance in the amount of
    Forty Thousand dollars <u>($40,000)</u>.

    To be allocated as follows:

    .1 For supply only of Finish Hardware.

13. H.S.T. Goods and Services tax is not included in Cash Allowance amount and is to be carried in the General Contractor's Stipulated Sum Amount.

14. Refer to Section 01005 for co-operation with others assigned to this Section.

End of Section

1. General

1. Submit to Architect, for review, shop drawings, product data and samples specified.

2. Until submission is reviewed, work involving relevant product must not proceed.

2. Shop Drawings

1. Drawings to be originals prepared by Contractor, Subcontractor, Supplier or Distributor, which illustrate appropriate portion of work; showing fabrication, layout, setting or erection details as specified in appropriate Sections.

2. Identify details by reference to sheet and detail numbers shown on Contract Drawings.

3. Maximum sheet size 24” x 36” as PDF.

3. Project Data

1. Certain specification Sections specify that manufacturer's standard schematic drawings, catalogue sheets, diagrams schedules, performance charts, illustrations and other standard descriptive data will be accepted in lieu of shop drawings.

2. Above will only be accepted if they conform to following:
   .1 Delete information which is not applicable to project.
   .2 Supplement standard information to provide additional information applicable to project.
   .3 Show dimensions and clearances required.
   .4 Show performance characteristics and capacities.
   .5 Show wiring diagrams (when requested) and controls.

4. Coordination of Submissions

1. Review shop drawings, product data and samples prior to submission.

2. Verify:
   .1 Field measurements.
   .2 Field construction criteria.
   .3 Catalogue numbers and similar data.

3. Coordinate each submission with requirement of work and Contract documents. Individual shop drawings will not be reviewed until all related drawings are available.

4. Contractor's responsibility for errors and omissions in submission is not relieved by Architect's review of submittals.

5. Contractor's responsibility for deviations in submission from requirements of Contract documents is not relieved by Architect's review of submission, unless Architect gives written acceptance of specified deviations.

6. Notify Architect, in writing at time of submission, of deviations from requirements of Contract documents.

7. After Architect's review, distribute copies.

5. Submission Requirements

1. Schedule submissions at least fourteen (14) days before dates that reviewed submissions will be required to be returned.

2. Submit a digital copy (PDF) of shop drawings, product data to Architect for review.

3. Accompany submissions with transmittal letter, containing:
   - .1 Date.
   - .2 Project title and number.
   - .3 Contractor's name and address.
   - .4 Number of each shop drawing, product data and sample submitted.
   - .5 Other pertinent data.

4. Submissions must include:
   - .1 Date and revision dates.
   - .2 Project title and number.
   - .3 Name of:
     - .1 Contractor.
     - .2 Subcontractor.
     - .3 Supplier.
     - .4 Manufacturer.
     - .5 Separate detailer when pertinent.

5. Identification of product or material.
   - .1 Relation to adjacent structure or materials.
   - .2 Field dimensions, clearly identified as such.
   - .3 Specification Section number.
   - .4 Applicable standards, such as CSA or CGSB numbers.
   - .5 Contractor's stamp, initialled or signed, certifying review of submission, verification of field measurements and compliance with Contract documents.

6. Interference Drawings
   - .1 Prepare interference drawings for all work in confined space ie: ceiling space.

End of Section

PART 1 - GENERAL

1.1 Related Work Specified Elsewhere

1. Not applicable

1.2 Existing Conditions

1. Take over structures to be demolished based on their conditions (on date that tender is accepted).

1.3 Demolition Drawings

1. Where required by authorities having jurisdiction, submit for approval drawings, diagrams or details clearly showing sequence of disassembly work or supporting structures.

1.4 Protection

1. Prevent movement, settlement or damage of adjacent grades. Provide bracing, shoring as required.

2. Prevent debris from blocking surface drainage inlets which must remain in operation.

3. Protect existing items designated to remain and materials designated for salvage. In the event of damage to such items, immediately replace or make repairs to approval of Owner and at not cost to Owner.

PART 2 - PRODUCTS

1. Not applicable.

PART 3 - EXECUTION

3.1 Work

1. Dispose of demolished materials except where noted otherwise.

3.2 Safety Code

1. Unless otherwise specified, carry out demolition work in accordance with Canadian Construction Safety Code 1980.

2. Should material resembling spray or trowel-applied asbestos be encountered, notify Architect. Any asbestos encountered will be removed by the Owner's Contractor.

3.3 Preparation

1. Disconnect electrical and telephone service lines entering areas to be demolished as per rules and regulations of authorities having jurisdiction. Post warning signs on electrical lines and equipment which must remain energized to serve other areas during period of demolition.

2. Inspect site and rectify with Architect items designated for removal and items to remain.

3. Disconnect and cap mechanical services in accordance with requirements of local authority having jurisdiction.

4. Natural gas supply lines to be removed by gas company or by qualified tradesman in accordance with gas company instructions.

3.4 Demolition & Field Work

1. Demolish areas as indicated on the drawings.

2. Remove existing equipment, services and obstacles, where required, for refinishing or making good of existing surfaces, and replace same as work progresses.

3. At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors of parts not to be demolished from exterior elements at all times).

4. Demolish in a manner to minimize dusting. Keep dusty materials wetted.

5. Demolish masonry and concrete walls in small sections. Carefully remove and lower structural framing and other heavy or large objects.

6. Burning materials on site is not permitted.

7. Remove contaminated or dangerous materials from site and dispose of in safe manner.

8. Employ rodent and vermin exterminators to comply with health regulations.

3.5 Salvage

1. Carefully dismantle items containing materials for salvage and stock pile salvaged materials at locations as directed by Architect.
2. Salvage all existing hardware to be reused – refer to door schedule.

3.6 Restoration

1. Upon completion of work, remove debris, trim services and leave work site clean.

3. Reinstall areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas.

3.7 Scheduling

1. Demolition of areas adjacent to occupied spaces may not occur during occupancy of these spaces. Contractor to schedule the demolition of these areas to occur after school hours or weekends.

End of Section

PART 1 - GENERAL

1.1 Related Work Specified Elsewhere

1. Not applicable.

1.2 Environmental Conditions

1. Sealant and substrata materials to be minimum 5 deg. C.

2. Should it become necessary to apply sealants below 5 deg. C, consult sealant manufacturer and follow their recommendations.

PART 2 - PRODUCTS

2.1 Materials

1. Primers: type recommended by sealant manufacturer.
2. Joint Fillers:
3. General: compatible with primers and sealants outsized 30 to 50%.
4. Polyethylene, urethane, neoprene or vinyl: extruded closed cell foam, Shore A hardness 20, tensile strength 140 to 200 kPa.
5. Neoprene or butyl rubber: round solid rod, Shore A hardness 70.
6. Polyvinyl chloride or neoprene: extruded tubing with 6 mm minimum thick walls.
7. Bond breaker: pressure sensitive plastic tape, which will not bond to sealants.
8. Sealant Type A: One component, chemical curing, conforming to CAN2-19.13-M82, Class C-2-25-B-N; multi-component, chemical curing, conforming to CAN2-19.24-M80, Type 2, Class B.
9. Sealant Type B: Multi-component, chemical curing mildew resistant conforming to CGSB 19-GP-22M.
10. Sealant type C: Multi-component, acrylic emulsion base, conforming to CGSB 19-GP-17M.
11. Acceptable Manufacturers: Tremco or Dow Corning.
12. Joint cleaner: xylol, methylethyl-ketone or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

PART 3 - EXECUTION

3.1 New Work

1. Caulk where specified and everywhere required.

2. Remove dust, paint, loose mortar and other foreign matter. Dry joint surfaces.

3. Remove rust, mill scale and coatings from ferrous metals by wire brush, grinding or sandblasting.

4. Remove oil, grease and other coatings from non-ferrous metals with joint cleaner.

5. Prepare concrete, masonry, glazed and vitreous surfaces to sealant manufacturer's instructions.

6. Examine joint sizes and correct to achieve depth ratio 1/2 of joint width with minimum width and depth of ¼", maximum width 1".

7. Install joint filler to achieve correct joint depth.

8. Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

9. Apply bond breaker tape where required to manufacturer's instructions.

10. Prime sides of joints to sealant manufacturer's instructions immediately prior to caulking.

3.2 Application

1. Apply sealants, primers, joint fillers, bond breakers, to manufacturer's instructions. Apply sealant, using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.

2. Form surface of sealant with full bead, smooth, and free from ridges, wrinkles, sags, air pockets, and embedded impurities. Neatly tool surface to a slight concave joint.

3. Clean adjacent surfaces immediately and leave work neat and clean. Remove excess sealant and droppings using recommended cleaners as work progresses. Remove masking after tooling of joints.

4. Use sealants specified in the following locations:

   Type A: Joints between windows or door frames and adjacent building components; control and expansion joints and all other locations where sealing is required, except in locations designated for Type B, C and D. Ensure that sealant chosen (from the several specified under "MATERIALS") for each location is recommended by manufacturer for use on surfaces encountered.

   Type B: Joints between splash backs and walls.

   Type C: Joints between interior metal doorframes and partitions.

3.3 Work Included

1. Work shall include but not limited to the following areas:

   .1 Interior hollow metal frames; both sides;
   .2 Exposed control and expansion joints in masonry walls, masonry corners, joints in front of steel lintels bearing on exterior brick jambs;
   .3 Joints between masonry and concrete surfaces.
   .4 Joints between gypsum board and masonry, or other materials. At all other locations on drawings, except as noted below.

2. Sealing of joints to the underside of exposed precast slab to be by precast installer.

3. Sealing of all joints at top of walls meeting exposed flat or sloped precast ceilings to be included in this section.

End of Section

PART 1 - GENERAL

1.1 Work Included

1. A single manufacturer shall fabricate products included within the scope of this Section.

2. Manufacturer shall be a member in good standing of the Canadian Steel Door Manufacturers Association (CSDMA).

3. Supply only of steel frame products including frames, transom frames, sidelight and window assemblies with provision for glazed, paneled or louvered openings, fire labeled and non-labeled, as scheduled or detailed by the Architect.

4. Supply only of flush steel doors with provision for glazed, paneled or louvered openings, insulated and un-insulated, fire labeled, with or without temperature rise ratings and non-labeled, as scheduled or detailed by the Architect.

5. Supply only of steel panels, similar in construction to steel doors, with flush or abetted bottoms for steel frames, transom frames, sidelight and window assemblies, fire labeled and non-labeled, as scheduled or detailed by the Architect.

6. Doors and frames shall be prepared for, but not limited to, preparations for heavy weight oversize butt hinges, continuous hinges, cylindrical locksets, concealed vertical rod and mortise lock case exit devices, surface door closers and concealed overhead stops.

1.2 Related Work

1. Building-in of frame product into unit masonry, previously placed concrete, structural or steel or wood stud walls.

2. Supply and installation of wood, plastic or composite core doors.

3. Supply and installation of builders' hardware except as specified for acoustic assemblies.

4. Drilling and tapping for surface mounted or non-templated builders' hardware.

5. Caulking of joints between frame product and other building components.

6. Supply and installation of gaskets or weather-strip.

7. Supply and installation of louvers or vents.

8. Supply and installation of glazing materials.

9. Site touch-up and painting.

10. Wiring for electronic or electric hardware.

11. Field measurements.

12. Fasteners for frame product in previously placed concrete, masonry or structural steel.

13. Steel lintels, posts, columns or other load-bearing elements.

14. Field welding.

1.3 Requirements of regulatory agencies

1. Install fire labeled steel door and frame product in accordance with NFPA-80, current edition, unless specified otherwise.

1.4 References

1. ANSI A115.IG-1994	Installation Guide for Doors and Hardware
2. ANSI A250.4-1994	Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.
3. ASTM A653-M97	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
4. ASTM A924-M97	Standard Specification for General Requirements for Sheet, Metallic-Coated by the Hot-Dip Process.
5. ASTM B117-95	Method of Salt Spray (Fog) Testing.
6. ASTM C177-97	Test Method for Steady-State heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
7. ASTM C518-91	Test method for Steady State Heat Flux Measurements and Thermal Transmission properties by means of the heat Flow Meter Apparatus.
8. ASTM C578-95	Specification for Rigid, Cellular polystyrene Thermal Insulation
9. ASTM C665-95	Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
10. ASTM D1735-92	Practice for Testing Water Resistance of Coating Using Water Fog Apparatus
11. CAN4-S104-M80	Fire Tests of Door Assemblies
12. CAN4-S105-M85	Standard Specification for Fire Door Frames Meeting the performance required by CAN4-S104

13. CAN4-S106-M80	Standard Method for Fire Tests of Window and Glass Block Assemblies
14. CGSB 41-Gp-19Ma	Rigid Vinyl Extrusions for Windows and Doors
15. CGSB 82.5-M88	Insulated Steel Doors
16. CSA A101-M83	Mineral Fiber Thermal insulation for Buildings
17. CSA W59-M89	Welded Steel Construction (Metal Arc Welding)
18. ISO 9001:1994	Quality Systems – Model for Quality Assurance
19. NFPA-80, 1999	Fire Doors and Windows
20. CSDMA	Dimensional Standards for Commercial Steel Doors and Frames

21. Manufacturers Standard and Galvanized Sheet Gauges

22. Fleming Fire Labeling Specifications

23. ULC List of Equipment and Materials, Volume 2

1.5 Testing and Performance

1. Door constructions covered by this specification shall be certified as meeting Level “A” (1,000,000 cycles) and Twist Test Acceptance Criteria (deflection not to exceed 6.4 mm /13.6kg force, total deflection at 136.1kg force not to exceed 63.5 mm and permanent deflection not to exceed 3.2 mm) when tested in strict conformance with ANSI-A250.4-1994. Test shall be conducted by an independent nationally recognized accredited laboratory.

2. Fire labeled product shall be provided for those openings requiring fire protection and temperature rise ratings, as determined and scheduled by the Architect. Doors, frames, transom frames and sidelight assemblies shall be tested in strict accordance with CAN4-S106. Product shall be listed by Underwriters Laboratories of Canada under an active Factory Inspection Program and shall be constructed as detailed in Follow-Up Service procedures issued to the manufacturer.

3. Should any door or frame specified by the Architect to be fire rated, not qualify for labeling due to design, hardware, glazing or any other reason, the Architect shall be so advised before manufacturing commences.

4. Core materials for exterior doors shall attain a thermal resistance rating of RSI 1.06 (R6.0) when tested in accordance with ASTM C177 or ASTM C518.

5. Product shall be manufactured by a firm experienced in the design and production of standard and custom commercial steel door and frame assemblies, the integration of

builders' or electronic hardware and glazing materials and their impact on the scope of work.

6. Manufacturer shall be assessed and registered as meeting the requirements of Quality Systems under ISO 9001.

7. Product quality shall meet standards set by the Canadian Steel Door Manufacturers Association.

1.6 Test Reports

1. All alternates to this specification shall be submitted to the Architect for acceptance ten (10) days prior to bid date, complete with test reports from independent, nationally recognized testing authorities, certifying that:

    .1 Steel door and frame assemblies furnished under this section meet the acceptance criteria of ANSI-A250.4-1994, Level "A".
    .2 Insulated door cores furnished in exterior doors under this Section meet the specified thermal resistance rating.

2. All reports shall include name of testing authority, date of test, location of test facility, descriptions of test specimens, procedures used in testing and indicate compliance with acceptance criteria of the test.

1.7 Submittals

1. Submit shop drawings in accordance with the General Conditions of the Contract.

2. Indicate each type of door, frame, steel, core, material thickness, mortises, reinforcements, anchorages, locations of exposed fasteners, openings (glazed, paneled or louvered) and arrangement of standard builders' hardware.

3. Include a schedule identifying each unit, with door marks or numbers referencing the numbering in Architect's schedules or drawings.

4. Provide confirmation in writing that all aspects to reinforcing, construction, and gauge of metal are met as written in this section.

1.8 Warranty

1. All steel door and frame product shall be warranted from defects in workmanship for a period of two (2) years from date of shipment.

2. All steel door and frame product shall be warranted against rust perforation for a period of five (5) years when the installed and finish painted with a commercial quality paint to the manufacturers recommendations.

3. Finish paint adhesion on all door and frame product shall be warranted for a period of five (5) years when the product has been properly cleaned and finish painted with a

commercial quality paint applied as recommended by the paint manufacturer. This warranty shall not exceed that provided by the paint manufacturer.

PART 2 - PRODUCTS

2.1 Doors

1. **Materials**

.1 Doors shall be fabricated from tension leveled steel to ASTM A924-M97, galvanized to ASTM A653-M97, Commercial Steel (CS), Type B, coating designation ZF75, known commercially as paintable Galvanneal.

.2 Door Cores:
Honeycomb:
Structural small cell (25.4 mm maximum) kraft paper "honeycomb". Weight: 36.3 kg per ream (minimum), density: 16.5 kg/m^3 (minimum), sanded to the required thickness.
.1 Polystyrene:
Rigid extruded, fire retardant, closed cell board, density 16kg/m^2, thermal values: RSI 1.06 minimum, conforming to ASTM C578.
.2 Temperature Rise Rated (TRR):
Solid slab core of non-combustible, inorganic composite to limit temperature rise on the "unexposed" side of door to 250°C at 30 or 60 minutes, as required by governing building code requirements and determined and scheduled by the Architect.

.3 Adhesives:
.1 Honeycomb Cores and Steel Components:
Heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement or ULC approved equivalent.
.2 Interlocking Edge Seams:
Resin reinforced polychloroprene (RRPC), fire resistant, high viscosity, sealant/adhesive or UL approved equivalent.
.3 Polystyrene Cores:
Heat resistant, epoxy based, low viscosity, contact cement.

.4 Primer:
Rust inhibitive touch-up only.

.5 Exterior Top Caps:
Rigid polyvinylchloride (PVC) extrusion.

2. **Construction**

.1 General:
.1 This section is based on doors and frames as manufactured by Fleming. Doors and frames by other manufacturers are acceptable subject to be similar to the one specified and meeting the terms of this section.

.2 Doors shall be swinging, 44.4 mm thick of the types and sizes indicated on the Architect's schedules or drawings.
.3 Exterior doors shall be lock seam, flush.
.4 Face sheets for exterior doors shall be fabricated from (16) gauge steel.
.5 Longitudinal edges of exterior doors shall be mechanically interlocked, fully welded, ground smooth with no visible seams. Do not fill seams.
.6 Face sheets of interior doors shall be fabricated from 18 gauge steel, except for heavy traffic doors (noted **HT** in Door Schedule) face sheet to be 16 gauge.
.7 Longitudinal edge of heavy traffic doors (noted **HT** in Door Schedule) shall be mechanically interlocked, fully welded, ground smooth with no visible seams. Do not fill seams.
.8 Interior doors shall be stiffened, insulated and sound deadened with honeycomb core laminated under pressure to each face sheet.
.9 Stiffened, insulated and sound deadened with Fleming's propriety core where Temperature Rise Rated (TRR) fire labeled doors are specified on the Architect's schedules.
.10 Longitudinal edges of interior doors shall be mechanically interlocked, adhesive assisted with edge seams visible.
.11 Door faces of all steel doors shall be fabricated without visible seams, free of scale, pitting, coil brakes, buckles and waves.
.12 Formed edges shall be true and straight with a minimum radius for the thickness of steel used.
.13 Lock and hinge edges shall be beveled 3 mm in 50 mm unless builders' hardware or door swing dictates otherwise.
.14 Top and bottom of doors shall be provided with inverted, recessed, 16 gauge steel end channels, welded to each face sheet at 150 mm on center maximum.
.15 Exterior doors shall be provided with factory installed flush PVC top caps. Fire labeled exterior doors shall be provided with factory installed flush steel top caps.
.16 Unless ineligible due to design, size, hardware or glazing specified on the Architects' or hardware Suppliers' schedules or details, fire labeled doors shall be provided for those openings requiring fire protection ratings and temperature rise ratings, as determined and scheduled by the Architect.
.17 Exterior doors shall be internally reinforced with 20 gauge continuous; interlocking steel stiffeners at 150mm O.C. max, with voids between stiffeners filled and insulated with 24kg/m3 density loose batt type fiberglass material to suit fully welded design.

.2 <u>Hardware Preparations:</u>
.1 Doors and frames shall be prepared for, but not limited to preparations for heavy weight oversized butt hinges, continuous hinges, cylindrical locksets, rim exit devices, surface door closers and concealed overhead stops.
.2 Doors shall be factory blanked, reinforced, drilled and tapped for fully templated mortised hardware only, in accordance with the final approved schedule and templates provided by the hardware supplier.
.3 Doors shall be factory blanked and reinforced only for mortised hardware that is not fully templated.
.4 Doors shall be factory reinforced only for surface mounted hardware.

.5 Templated holes 12.7mm diameter and larger shall be factory prepared, except mounting and through bolt holes, which shall be by the contractor responsible for installation on site, at the time of application. Templated holes less than 12.7mm diameter shall be factory prepared only when required for the function of the device (for knobs, levers, cylinders, thumb or turn pieces) or when these holes over-lap function holes.

.6 Drilling and tapping for surface mounted hardware or mortised hardware that is not fully templated shall be by the contractor responsible for installation on site, at the time of application.

.7 Hinge and pivot reinforcements shall be 10 gauge steel minimum high frequency type reinforcing.

.8 Hinge reinforcements for acoustic doors and doors in excess of 2450mm rabbet height shall be 10 gauge minimum with each cutout provided with 114.3mm heavy weight (4.6mm) high frequency type.

.9 Lock, strike and flush bolt reinforcements shall be 12 gauge steel minimum.

.10 Reinforcements for concealed closers and holders shall be 12 gauge steel minimum.

.11 For surface mounted hardware, reinforcements shall be 16 gauge steel minimum.

.12 All pairs of fire labeled doors shall be provided with 12 gauge steel surface mounted flat bar astragal, shipped loose for application on site, by the contractor responsible for installation.

.13 Pairs of doors up to 2450mm x 2450mm, to 1½ hour fire rating maximum shall be provided without astragals. Lock edge seam of such doors shall be tacked-welded and ground smooth. All other fire labeled pairs shall be provided with 12 gauge steel surface mounted flat bar astragal, shipped loose for application on site, by the contractor responsible for installation.

.14 Where electrically or electronically operated hardware is specified on the Architects' schedules or details of the final approved schedule and templates provided by the hardware supplier, hardware enclosures and/or junction boxes, where indicated on the templates, shall be provided and interconnected with CSA Approved 12.7mm diameter conduit and connectors.

.15 Prepare doors to receive security door contacts – refer to electrical drawings for locations. Door contacts to be installed at 100 mm from the latch side door edge.

.3 Glazing:

.1 Where 6mm thick glazing materials are specified on the Architects schedules or details, doors shall be provided with 20 gauge steel glazing trim and snap-in glazing stops.

.2 Where other that 6mm glazing is specified on the Architect's schedules or details, doors shall receive 20 gauge steel trim and screw fixed glazing stops. Screws shall be #6 x 32mm oval head scrulox (self-drilling) type at 300mm on center maximum.

.3 Glazing trim and stops shall be accurately fitted, butted at corners, with removable glazing stops located on the 'push' side of the door.

.4 Glazing trim at doors and screens must be on the interior side of the unit.

.4 Louver Preparations:
- .1 Where specified on the Architect's schedules or details, non-labeled doors shall be prepared on accordance with the louver manufacturer's details.
- .2 Where specified on the Architect's schedules or details, fire labeled doors shall be prepared for UL listed sight-proof fusible link louvers in accordance with the louver manufacturer's details.
- .3 Louvers shall be supplied and installed by others.

.5 Finishing:
- .1 Remove weld slag and splatter from exposed surfaces.
- .2 All tool marks, abrasions and surface blemishes shall be filled and sanded to present smooth uniform surfaces.
- .3 On exposed surfaces where zinc coating has been removed during fabrication, doors shall receive a factory applied touch-up primer.
- .4 Primer shall be fully cured prior to shipment.

2.2 Panels

1. Panels shall be fabricated form the same materials, construction and finished in the same manner as doors as specified in Section 2.1.

2.3 Frame Product

1. **Materials**

.1 Steel:
Frame product shall be fabricated from tension leveled steel to ASTM A924-M97, galvanized to ASTM A653-M97, Commercial Steel (CS), Type B, coating designated ZF75, known commercially as paintable Galvanneal.

.2 Primer:
Rust inhibitive touch up only.

.3 Miscellaneous:
- .1 Door Silencers:
  GJ-64, Single Stud rubber/neoprene type
- .2 Thermal Breaks:
  Rigid polyvinylchloride (PVC) extrusion
- .3 Fiberglass:
  Loose batt type, density: 24kg/m^3 (minimum), conforming to ASTM C665

2. **Construction**

.1 General:
- .1 All steel frame product shall be as manufactured by Fleming of the types, sizes and profiles indicated on the Architects' schedules or details.
- .2 Exterior frames shall be thermally broken, Fleming *Therma-Frame* Series, fabricated from 16 gauge steel.
- .3 Exterior frame product shall be supplied profile welded (PW)

.4 Interior and exterior sections of thermally broken frames shall be separated by a continuous PVC thermal break.
  .1 Thermally broken sections shall not be assembled by means of screws, grommets or other fasteners and welds shall not cause thermal transfers between interior and exterior surfaces of the frame sections.
  .2 Closed sections (mullions and center rails) of thermally broken frames shall be factory insulated with 24kg/m^3 loose batt type fiberglass material.

.5 Insulation of open sections (jambs, heads and sills) on exterior frame product shall be provided and installed by the contractor responsible for installation.

.6 Interior frames shall be Fleming F-Series, fabricated from 16 gauge steel.

.7 Interior frame product shall be supplied profile welded (PW)

.8 Knocked-down and knocked-down drywall frames shall not be acceptable.

.9 Jambs, heads, mullions, sills and center rails shall be straight and uniform throughout their lengths.

.10 Frame product shall be square, free of defects, wraps or buckles.

.11 Corner joints shall be profile welded (PW) (continuously welded on the inside of the profiles' faces, rabbets, returns and soffit intersections with exposed faces filled and ground to a smooth, uniform, seamless surface)"

.12 Joints at mullions, transom bars, sills or center rails shall be coped accurately, butted and tightly fitted, with faces securely welded, matching corner joint faces.

.13 All steel mullions will be fabricated from the same materials as specified for the steel frames. Steel mullions will be fabricated as a fully assembled three piece unit consisting of a front, back and full height one piece attachment clip as per Fleming F Series. The attachment clip will completely fill the stop area of the mullion on both sides and span the void between each side forming a grid channel like structure. Mullions used as hinge mullions or strike mullions between doors will be filled with grout by the general contractor either prior to or following installation of the frame. The head of the frame shall have an opening sufficient for the grout to be poured in to the mullion.

.14 Mullions shall be fabricated with continuous 20 gauge galvanneal steel internal reinforcing clips.

.15 Frame product shall be fabricated with integral door stops having a minimum height of 16mm.

.16 Glazing stops shall be formed 20 gauge steel, 16mm height channel, accurately fitted, butted at corners and fastened to frame sections with #6 x 32mm oval head scrulox (self-drilling) type screws at 300mm on center maximum.

.17 Where required due to site access, as indicated on the Architects' schedules or details, when advised by the contractor responsible for co-ordination or installation, or when shipping limitations so dictate, frame product shall be fabricated in sections for splicing in the field.
  .1 Field spliced jambs, heads and sills shall be provided with 16 gauge steel splice plates securely welded into one section, extending 100mm minimum each side of splice joint.

.2 Field splices at closed sections (mullions or center rails) shall be 16 gauge steel splice angles securely welded to the abutting member. Face of splice angle shall extend 100mm minimum into closed sections when assembled.

.3 Field splice joints shall be welded, filled and ground to present a smooth uniform surface by the contractor responsible for installation after assembly.

.18 Each door opening shall be provided with two (2) temporary steel jamb spreaders welded to the base of the jambs or mullions to maintain proper alignment during shipping and handling. Spreaders shall be removed by the contractor responsible for installation prior to anchoring of frame to floor.

.19 Each door opening shall be prepared for GJ-64 or equivalent, single stud door silencers, three (3) for single door openings, two (2) for double door openings. Silencers shall be shipped loose for installation by the contractor after finish painting.

.20 Unless ineligible due to design, size, hardware or glazing specified on the Architects' or Hardware Suppliers' schedules or details, fire labeled frame product shall be provided for those openings required fire protection ratings as determined and scheduled by the Architect.

.2 Hardware Preparations

.1 Frame product shall be blanked, reinforced, drilled and tapped for fully templated mortised hardware only, in accordance with the final approved schedule and templated provided by the hardware supplier.

.2 Frame product shall be factory blanked and reinforced only for mortised hardware that is not fully templated.

.3 Frame product shall be reinforced only for surface mounted hardware.

.4 Drilling and tapping for surface mounted hardware or mortised hardware that is not fully templated shall be by the contractor responsible for installation on site, at the time of application.

.5 Frames shall be prepared for 114.3mm standard weight hinges (minimum).

.6 Hinge and pivot reinforcements shall be 10 gauge steel minimum reinforcing, high frequency type shall be provided.

.7 Hinge reinforcements for acoustic frames and frames in excess of 2450mm rabbet height shall be 10 gauge minimum with each cutout provided with 114.3mm heavy weight (4.6mm) high frequency type.

.8 Strike reinforcements shall be 16 gauge steel minimum.

.9 Reinforcements for surface mounted hardware, concealed closers and holders and flush bolts shall be 12 gauge steel minimum.

.10 Mortised cutouts shall be protected with 22 gauge steel minimum guard boxes.

.11 Where electrically or electronically operated hardware is specified on the Architects schedules or details or the final approved schedule and templates provided by the hardware supplier, hardware enclosures and/or junction boxes, where indicated on templates, shall be provided and inter-connected with CSA Approved 12.7mm diameter conduit and connectors.

.12 Prepare frames to receive security door contacts – refer to electrical drawings for locations. Door contacts to be installed at 100 mm from the latch side door edge.

.3 Anchorage:
- .1 Frame product shall be provided with anchorage appropriate to floor, wall and frame construction.
- .2 Each wall anchor shall be located immediately above or below each hinge reinforcement on the hinge jamb and directly opposite on the strike jamb, except as indicated below.
- .3 Frame product installed in unit masonry partitions shall be provided with 4.0mm diameter steel wire anchors, 18 gauge steel adjustable stirrup and strap or “T” type anchors as conditions dictate.
- .4 Where frame product is installed prior to construction of the adjacent wall, each jamb shall be provided with 16 gauge steel floor anchors. Each anchor shall be provided with two (2) holes for mounting to the floor and shall be securely welded to the inside of the jamb.
- .5 Floor anchors for thermally broken exterior frames shall be designed so as not to permit thermal transfers from exterior to interior surfaces of the frame sections.
- .6 Frame product installed in drywall partitions shall be provided with 20 gauge steel snap-in or “Z” type stud type anchor.
- .7 Jambs of frames in previously placed concrete, masonry or structural steel shall be punched and dimpled to accept machine bolt anchors, 6.4mm diameter, located not more than 150mm from the top and bottom of each jamb. Anchor preparations and guides shall also be located immediately above or below the intermediate hinge reinforcings and directly opposite on the strike jamb. Each preparation shall be provided with 16 gauge anchor bolt guides.
- .8 Anchor bolts and expansion shell anchors for the above preparations shall be provided by the contractor responsible for installation.
- .9 After sufficient tightening of the anchor bolts, the heads shall be welded do as to provide a non-removable application. Welded bolt head and dimple shall be filled and ground to present a smooth uniform surface by the contractor responsible for installation, prior to finish painting.
- .10 Where indicated on the Architects’ schedules or details, channel extensions shall be provided from the top of the frame assembly to the underside of the structure above. Extensions shall be fabricated from 12 gauge steel formed channel, mounting angles welded to inside of frame head and adjusting brackets. Formed channels, adjusting brackets and fasteners shall be shipped loose. Channels shall be mechanically connected to mounting angles and adjusting brackets with supplied fasteners, on site, by contractor responsible for installation.

.4 Finishing:
- .1 Remove weld slag and spatter from exposed surfaces.
- .2 All tool marks, abrasions and surface blemishes shall be filled and sanded to present smooth and uniform surfaces.
- .3 On exposed surfaces where zinc has been removed during fabrication, frame product shall receive a factory applied touch-up primer.
- .4 Primer shall be fully cured prior to shipment.

2.4 Sizes and Tolerances

1. All sizes and tolerances shall be in accordance with the Canadian Steel Door Manufacturers Association "Recommended Dimensional Standards for Commercial Steel Doors and Frames" as follows:
   .1 Widths of door openings shall be measured from inside of frame jamb rabbet with a tolerance of +1.6mm, -0.8mm.
   .2 Heights of door openings shall be measured from the finished floor (exclusive of floor coverings) to the head rabbet of the frame with a tolerance of ± 1.2mm.
   .3 Unless builders' hardware dictates otherwise, doors shall be sized so as to fit the above openings and allow a 3mm clearance at jambs and head. A clearance of 19mm between the bottom of the door and the finished floor (exclusive of floor coverings) shall be provided. Tolerances on door sizes shall be ± 1.2mm.
   .4 Manufacturing tolerances on formed frame profiles shall be ± 0.8mm for faces, door stop heights and jamb depths. Tolerances for throat openings and door rabbet shall be ± 1.6mm and ± 0.4mm respectively. Hardware cutout dimensions shall be as per template dimensions, +0.4mm, -0.

2.5 Hardware Locations

1. Hardware preparations in frame product shall be as noted below and locations on doors shall be adjusted for clearances specified in 2.4.

2. Top of upper hinge preparation for 114.3mm hinges shall be located 180mm down from head, transom mullion or panel as appropriate. The top of the bottom hinge preparation for 114.3mm hinges shall be located 310mm from finished floor as defined in 2.4.3. Intermediate hinge preparations shall be spaced equally between top and bottom cutouts. For dutch door frames, top and bottom hinge locations shall be as above, with the tops of intermediate hinges located at 930mm and 1403mm from finished floor.

3. Strike preparations for unit, integral, cylindrical and mortise locks and roller latches shall be centered 1033mm from finished floor. Strikes for deadlocks shall be centered at 1200mm from finished floor. Strikes for panic or fire exit hardware shall be located as per device manufacturer's templates.

4. Push and/or pulls on doors shall be centered 10701mm from finished floor.

5. Preparations not noted above shall be as per hardware manufacturer's templates.

6. Hardware preparation tolerances shall comply with the ANSI A115 series standards.

PART 3 - EXECUTION

3.1 Site and Protection of Materials

1. The contractor responsible for installation shall remove wraps or covers from door and frame product upon delivery at building site.

2. All materials shall be thoroughly inspected upon receipt and all discrepancies, deficiencies and/or damages shall be immediately reported in writing to the supplier. All damage shall be noted on the carriers' Bill of Landing.

3. Contractor responsible for installation shall ensure all materials are properly stored on planks or dunnage in a dry location. Product shall be stored in a vertical position, spaced with blocking to permit air circulation between them. Materials shall be covered to protect them from damage from any cause.

4. Contractor shall notify the supplier in writing of any errors or deficiencies in the product itself before initiating any corrective work.

3.2 Installation

1. Install doors and frames in accordance with the Door and Hardware Institute "Installation guide for doors and hardware".

2. Set frame product plumb, square, aligned, without twist at correct elevation.

3. Frame Product Installation Tolerances:

   .1 Plumbness tolerance, measured through a line from the intersecting corner of vertical members and the head to the floor, shall be $\pm$ 1.6mm.
   .2 Squareness tolerance, measured through a line 90^0 from one jamb at the upper corner of the product, to the opposite jamb, shall be $\pm$ 1.6mm.
   .3 Alignment tolerance, measured on jambs, through a horizontal line parallel to the plane of the wall, shall be $\pm$ 1.6mm.
   .4 Twist tolerance, measured at face corners of jambs, on parallel lines perpendicular to the plane of the wall, shall be $\pm$ 1.6mm.

4. Fire labeled product shall be installed in accordance with NFPA-80.

5. Secure anchorages and connections to adjacent construction.

6. Brace frame product rigidly in position while building-in. Remove temporary steel shipping jamb spreaders. Install wood spreaders at mid points of frame rabbet height and at floor level to maintain frame widths. Provide vertical support at center of head for openings exceeding 1250mm in width. Remove wood spreaders after product has been built-in.

7. Frame product in unit masonry shall be fully grouted in place.

8. Install doors maintaining clearances outlined in Section 2.4.

9. Install louvers and vents.

10. Adjust operable parts for correct clearances and function.

11. Steel surfaces shall be kept free of grout, tar or other bonding materials or sealers.

12. Any grout or other bonding material shall be cleaned from products immediately following installation.

13. Exposed field welds shall be finished to present a smooth uniform surface and shall be touched-up with a rust inhibitive primer.

14. Exposed surfaces that have been scratched or otherwise marred during shipment, installation or handling shall be touched-up with a rust inhibitive primer.

15. Finish paint in accordance with Section 09900.

16. Install glazing materials and door silencers.

End of Section

PART 1 - GENERAL

1.1 Related Work

1. Commercial Steel Doors and Frames Section 08100

1.2 Submittals

1. Submit a 12” x 12” sample of all glass products in accordance with Section 01340.

1.3 Warranty

1. Contractor hereby warrants glass against defects and failure, including leakage, under normal conditions of use, in accordance with Division 1, but for five (5) years total.

PART 2 - PRODUCTS

2.1 Material

1. Interior Tempered Safety Glass: ¼” tempered clear float glass complete with etched tempered glass designation visible.

2. Polished Plate or Float Glass: To CAN/CGSB-12.3 clear.

3. Fire Rated Glass (FRG): Technical Glass Products - ¼” thick fire-rated glazing by FireLite. Model: FireLite NT – rated for 60 minutes. Each piece to be permanently labelled with logo and UL logo and fire rating. Approved equal by Pyran Platinum as manufactured by SCHOTT and SAFTI FIRST model SuperLite II-XL 60.

4. Setting blocks: neoprene, 80 durometer hardness, 4” x ¼” width to suit glass.

5. Glazing tape: preformed butyl with continuous spacer, 10-15 durometer, hardness, paper release, black color, 1/8” x 3/8”.

6. Gasket: black neoprene "U" cavity type with lock strip.

PART 3 - EXECUTION

3.1 Installation

1. Double Sealed Units
   .1 Install glass as per window manufacturer’s instruction to provide complete rain screen and air/ water barrier. ¼” thick tempered unit with ¼” sealed air space and ¼” thick tempered unit.

2. Other Glass
   .1 Clean and dry surfaces.
   .2 Apply glazing tape to fixed stops. Place setting blocks at 1/3 points.
   .3 Set glass on setting blocks against tape.
   .4 Apply glazing tape to glass.

.5 Install stops.
.6 Install glass in doors and screens with neoprene gasket.
.7 Clean glass prior to building occupancy.
.8 **NOTED:** Removable glazing stops to be in the interior side of all hollow metal door frames and screens.

End of Section

PART 1 - GENERAL

1.1 Related Work

1. Door Schedule — refer to drawings
2. Commercial Steel Doors and Frames — Section 08100

1.2 Reference Standard

1. Ontario Painting Contractors Association (OPCA) Architectural Specification Manual - referenced as OPCA Manual, latest Edition. Paint formulations and methods referred to herein refer to this Manual. If contractor is unfamiliar with this reference standard, contact the OPCA.

1.3 Product Data

1. Submit to Architect, for review, product data for all formulas, including manufacturer's trade names.
2. Paint Manufacturer will provide periodic reviews and reports to Architect regarding work in this Section and if Contractor is adhering to manufacturer’s product specifications.

1.4 Environmental Requirements

1. Do not apply paint finish in areas where dust is being generated.
2. Conform to requirements of OPCA Manual.
3. Comply with the requirements of Health and Environmental Specifications.

1.5 Extent of Painting

1. For new construction, for rooms shown in room finish schedule to have painted walls, paint all non prefinished surfaces unless indicated otherwise, and repaint prefinished surfaces where indicated.
2. For existing construction, for rooms shown in room finish schedule to have repainted walls:
   - Paint all non prefinished new surfaces unless indicated otherwise.
   - Repaint prefinished surfaces where indicated.
   - Repaint all previously painted surfaces unless indicated otherwise.

1.6 Finishes and Colours

1. Review the requirements outlined in Finish and Colour Notes.
   A separate colour schedule will be issued after contract award.

PART 2 - PRODUCTS

2.1 Materials

1. Acceptable products: Per Chapter 5 OPCA Manual as listed.

2. Paint materials for each paint system to be products of a single manufacturer.

3. Use low-VOC and low-odour paints only.

PART 3 - EXECUTION

3.1 Preparation of Surfaces in New Construction

1. Prepare surfaces to receive paint per Chapter 3 OPCA Manual.

2. Prepare wood surfaces to CGSB 85-GP-1M.
   .1 Use CGSB 1-GP-126M vinyl sealer over knots resinous areas.
   .2 Apply wood paste filler to nail holes and cracks.
   .3 Tint filler to match stains for stained woodwork.

3. Touch up shop paint primer on steel with CGSB 1-GP-40M to CGSB 85-GP-14M.

4. Prepare galvanized steel and zinc coated surface to CGSB 85-GP-16.

5. Prepare wallboard surfaces to CGSB 85-GP-33M. Fill minor cracks with plaster patching compound.

3.2 Preparation of Previously Painted Surfaces

1. Remove screws, bolts, nails, etc. from all surfaces to be painted

2. Remove all peeling and scaling paint by scraping and sanding.

3. Remove loose and broken pieces. Fill all holes, cracks and crevices with appropriate patching compound and match surrounding texture. Touch-up with appropriate primer.

4. Remove all dirt, grease, oil, wax and other contaminants by scrubbing with a detergent solution such as trisodium phosphate. Rinse with clean water.

5. All metal surfaces must be washed with mineral sprits. Change solvent and rags frequently. Remove all rust by sanding. Prime with rust inhibitive paint.

6. Dull all glossy surfaces by sanding

7. Wash with solvent surfaces that have been subject to writing with marking pens, crayons, or lipsticks. Prime to stop bleeding.

8. For joints within or adjacent to exterior areas to be painted or cleaned, remove old cracked and loose caulking and replace with a high quality caulking compound.

3.3 Application

1. Sand and dust between each coat to remove defects visible from distance up to 60".

2. Finish closets and alcoves as specified for adjoining rooms.

3. Apply each coat at the proper consistency. Each coat of finish should be fully dry and hard before applying the next coat, unless the manufacturer's instructions state otherwise.

3.4 Mechanical and Electrical Equipment

1. Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas as well as inside cupboards and cabinet work. Colour and texture to match adjacent surfaces, except as noted otherwise. Coordinate with mechanical trades applying banding and labeling after pipes have been painted. Do not paint white PVC covers on exposed mechanical water, drain and other lines

2. Paint gas piping standard yellow where visible on roof or in service spaces.

3. Paint surfaces inside of ductwork and elsewhere behind grilles where visible using primer and one coat of matte black paint.

4. Paint both sides and edges of plywood backboards for equipment before installation.

5. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.5 Paint Systems

1. System references listed are based on Chapters 4A and 4B of OPCA Manual and are OPCA Premium Grade, unless noted otherwise.

3.6 Interior Finishes

1. Wood, where applicable: INT. 1-A, Alkyd Semi-Gloss Finish, Premium Grade.

2. Gypsum board - Ceilings and bulkheads - INT. 4-A, Alkyd Flat Finish, Premium Grade.

3. Gypsum board – walls: JNT4A, Alkyd eggshell, Premium Grade.

4. Concrete Block: INT. 8-B, Alkyd Semi-Gloss Finish, Premium Grade.

5. Galvanized metal: INT. 13-A, Alkyd Semi-Gloss Finish, Premium Grade.

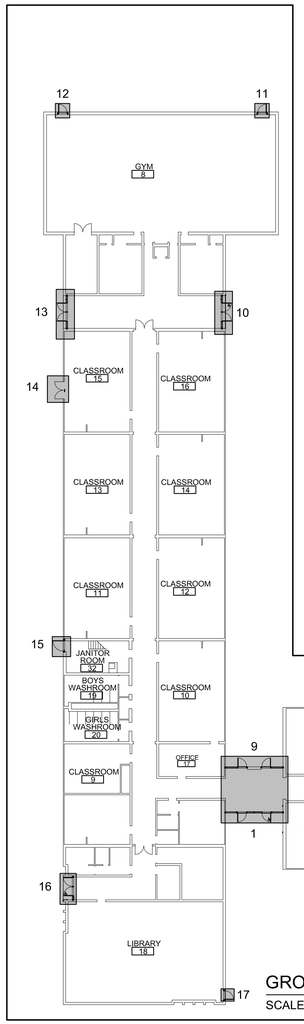
3.7 Refinishing of Previously Painted Surfaces

1. Apply two (2) finishing coats of paint materials listed in Section 3.5 and 3.6 for the type of surface considered.

2. When satisfactory coverage can be achieved by only one (1) coat, the second coat is not required.

3. Apply additional coats if necessary to cover accent colours, graphics, etc.

End of Section



GROUND FLOOR PLAN DOORS REPLACEMENT LOCATION

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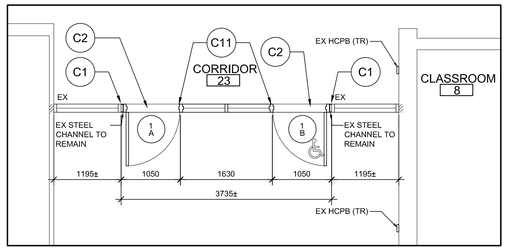

PLAN DETAIL DOOR # 1

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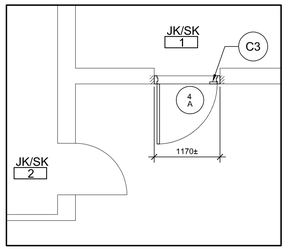

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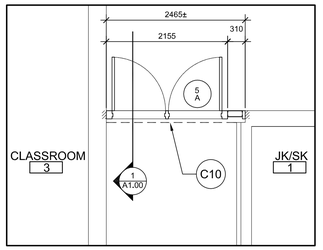

PLAN DETAIL DOOR # 5

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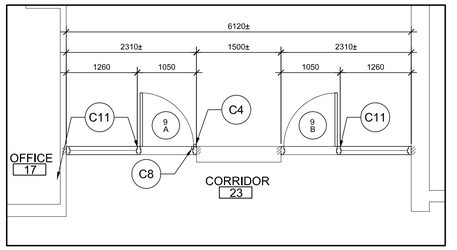
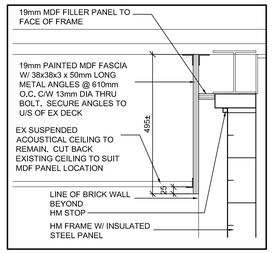


PLAN DETAIL DOOR # 9

SCALE: 1:50



1 A1.0 DETAIL - MDF PANEL AT WINDOW

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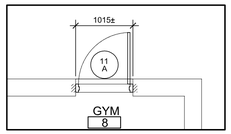

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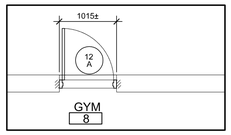

PLAN DETAIL DOOR # 12

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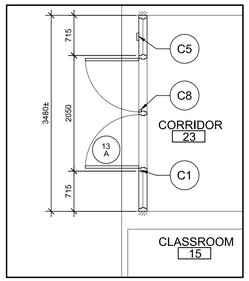
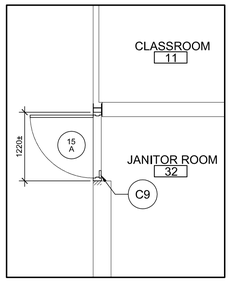


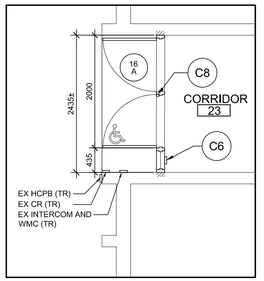
PLAN DETAIL DOOR # 13

SCALE: 1:50



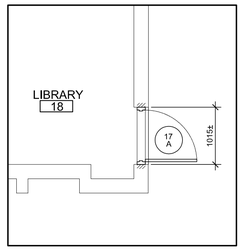
PLAN DETAIL DOOR # 15

SCALE: 1:50



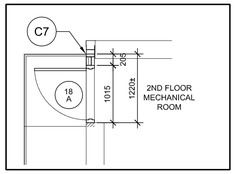
PLAN DETAIL DOOR # 16

SCALE: 1:50



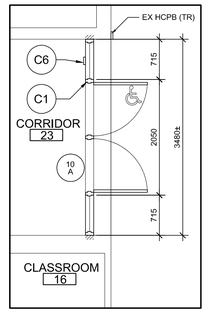
PLAN DETAIL DOOR # 17

SCALE: 1:50



PLAN DETAIL DOOR # 18

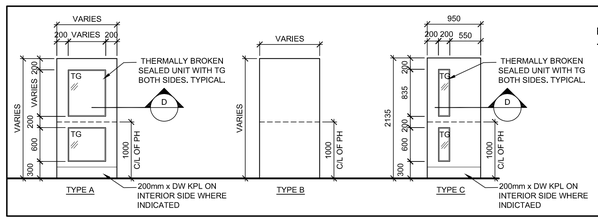
SCALE: 1:50



PLAN DETAIL DOOR # 10

SCALE: 1:50

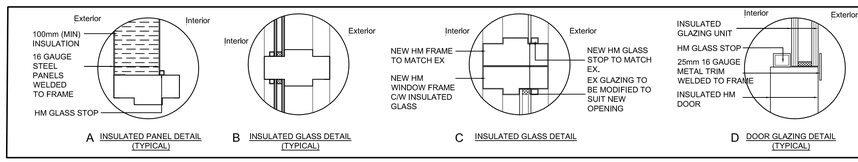
DOOR SCHEDULE													
DOOR NO.	LOCATION AREA	DOORS							FRAME				REMARKS
		WIDTH	HEIGHT	FIRE	TYPE	MAT'L	FIN.	GLASS	TYPE	MAT'L	FIN.	GLASS	
FIRST FLOOR													
1A	DOOR #1	950	2080	--	A	HM	PAINT	TG	2	HM	PAINT	TG	CH, CL, DP, DS, KPL, PH, TH, WS
1B	DOOR #1	950	2080	--	A	HM	PAINT	TG	2	HM	PAINT	TG	CH, DP, DS, KPL, PH, TH, WS. REMOVE AND RE-INSTALL EX. B/F ACCESS/HANDICAP DOOR OPERATOR.
2	DOOR #2 (EX)												EX TO REMAIN
3	DOOR #3 (EX)												EX TO REMAIN
4A	DOOR #4	1066	2080	--	A	HM	PAINT	TG	1	HM	PAINT	TG	CL, DP, DS, PH, TH, WS. REMOVE AND RE-INSTALL EX. DOOR ALARM.
5A	DOOR #5	950 & 950	2135	--	C	HM	PAINT	TG	3	HM	PAINT	TG	CH, CL, DP, DS, KPL, PH, TH, WS
6	DOOR #6 (EX)												EX TO REMAIN
7	DOOR #7 (EX)												EX TO REMAIN
8	DOOR #8 (EX)												EX TO REMAIN
9A	DOOR #9	950	2135	--	4	HM	PAINT	TG	4	HM	PAINT	TG	CH, CL, DP, DS, ES, KPL, PH, TH, WS. REMOVE AND RE-INSTALL EX. CR.
9B	DOOR #9	950	2135	--	4	HM	PAINT	TG	4	HM	PAINT	TG	CH, CL, DP, DS, KPL, PH, TH, WS
10A	DOOR #10	950 & 950	2135	--	5	HM	PAINT	TG	5	HM	PAINT	TG	CH, CL, DP, DS, KPL, PH, TH, WS. REMOVE AND RE-INSTALL EX. B/F ACCESS/HANDICAP DOOR OPERATOR.
11A	DOOR #11	915	2135	--	B	HM	PAINT	--	1	HM	PAINT	--	CL, DS, PH, TH, WS
12A	DOOR #12	915	2135	--	B	HM	PAINT	--	1	HM	PAINT	--	CL, DS, PH, TH, WS
13A	DOOR #13	950 & 950	2135	--	5	HM	PAINT	TG	5	HM	PAINT	TG	CL, DP, DS, ES, KPL, PH, TH, WS. REMOVE AND RE-INSTALL EX. KP.
14	DOOR #14 (EX)												EX TO REMAIN
15A	DOOR #15	1066	1880	--	B	HM	PAINT	--	1	HM	PAINT	--	CL, DS, LA, LS, TH, WS
16A	DOOR #16	1118	2135	--	6	HM	PAINT	TG	6	HM	PAINT	--	CH, CL, DP, DS, ES, KPL, PH W/ CLS, TH, WS. REMOVE AND RE-INSTALL EXISTING B/F ACCESS/HANDICAP DOOR OPERATOR.
17A	DOOR #17	915	2135	--	B	HM	PAINT	--	1	HM	PAINT	--	CL, DS, PH W/ ALARM, TH, WS
18A	DOOR #18	915	2160	--	B	HM	PAINT	--	7	HM	PAINT	--	CL, DS, LA, LS, TH, WS



NOTE: GLAZING TO BE:
- DOUBLE GLAZED SEALED INSULATING UNITS WITH 6mm TEMPERED GLASS BOTH SIDES AT **EXTERIORS DOOR**.

DOOR TYPES

SCALE: 1:50



GLAZING DETAILS

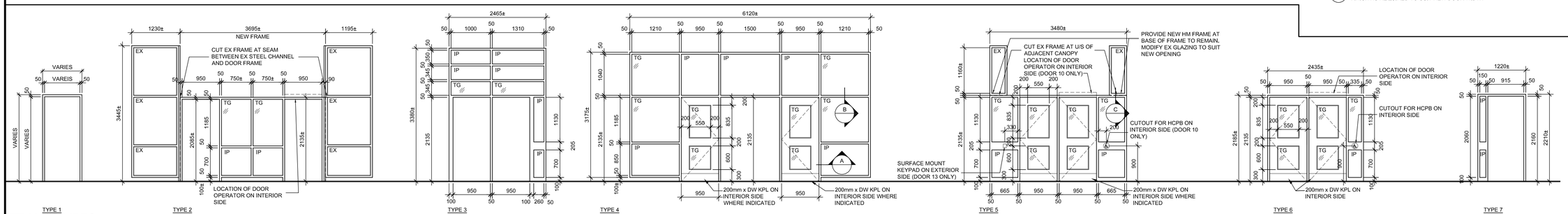
SCALE: NTS

GENERAL NOTES

1. REMOVE AND DISCARD ALL EX. DOOR HARDWARE UNLESS NOTED OTHERWISE. REFER TO DOOR SCHEDULE. PROVIDE ALL NEW DOOR HARDWARE.
2. REMOVE AND REINSTALL ALL SECURITY SENSORS WHERE EXISTING AS NEEDED.
3. REMOVE AND REINSTALL ALL AUTOMATIC HANDICAP DOOR OPERATOR WHERE EXISTING AS NEEDED.
4. INSTALL WEATHER STRIPPING, DOOR SWEEP AND THRESHOLDS AT ALL NEW DOORS.
5. INSTALL NEW DOOR CONTACT AND REWIRE AS NEEDED.
6. REMOVE CARD READER FROM EXISTING FRAME AND REINSTALL ON NEW FRAMES SAME LOCATION, REWIRE AS NEEDED.
7. REPAIR EXISTING BASE OF STEEL COLUMN AS NEEDED BEFORE INSTALATION OF NEW FRAME AND DOOR.
8. REMOVE HCPB FROM EXISTING FRAME AND REINSTALL ON NEW FRAMES SAME LOCATION, REWIRE AS NEEDED.

CONSTRUCTION NOTES

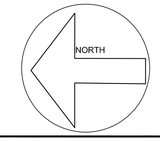
- C1 EX HM FRAME TO BE CUT TO ALLOW FOR REMOVAL OF FRAME. PATCH AND REPAIR REMAINING FRAME TO MAKE READY TO ACCEPT NEW HM FRAME. REFER TO FRAME ELEVATIONS FOR EXTENT OF CUTTING.
- C2 REPAIR EXISTING TOP OF CONCRETE FOUNDATION AS NEEDED TO SUIT NEW FRAME AND DOOR.
- C3 REMOVE AND RE-INSTALL EX SURFACE MOUNTED DOOR ALARM.
- C4 REMOVE CR FROM EX FRAMES AND REINSTALL ON NEW FRAMES IN SAME LOCATION. REWIRE AS NEEDED. REFER TO FRAME ELEVATION.
- C5 REMOVE KP FROM EX FRAMES AND REINSTALL ON NEW FRAMES IN LOCATION SHOWN, REWIRE AS NEEDED. REFER TO FRAME ELEVATION.
- C6 REMOVE AND DISCARD EX FRAME MOUNTED HCPB. PROVIDE NEW HCBP. REFER TO FRAME ELEVATION FOR LOCATION OF PUSH BUTTON. REWIRE AS NEEDED.
- C7 CUT EX HANDRAIL FROM EX FRAME. CUT, REMOVE AND DISCARD EXISTING END PICKET. PROVIDE NEW SQUARE POST TO MATCH EXISTING (ASSUME 25mm X 25mm). PAINT NEW POST AND MODIFIED HANDRAIL TO MATCH EXISTING.
- C8 PROVIDE ES ON DOOR FRAME INDICATED
- C9 REMOVE AND REINSTALL EX DOOR CONTACTS, REWIRE AS NEEDED.
- C10 DENOTES LINE OF MDF PANEL AT CEILING LEVEL INLINE W/ END OF EX BRICK WALL. MODIFY EX CEILING AND GRID TO SUIT PANEL LOCATION. REFER TO DETAIL.
- C11 CUT BACK EX CONC FOUNDATION WALL AND TERRAZZO FLOOR FINISH AS REQUIRED TO SUIT NEW DOOR WIDTH



FRAME TYPES

SCALE: 1:50

Halton District School Board



LEGEND

B/F	BARRIER FREE
CH	CONTINUOUS HINGE
CL	CLOSER
CLS	CYLINDER LOCKSET
CONC	CONCRETE
C/L	CENTRE LINE
C/W	COMPLETE WITH
DP	DOOR PULL
DS	DOOR SWEEP
DW	DOOR WIDTH
EX	EXISTING ITEM
ES	ELECTRIC STRIKE
EQ	EQUAL
FM	FIXED MULLION
HM	HOLLOW METAL
HCPB	HANDICAP DOOR PUSH BUTTON
IP	INSULATED PANEL
KP	KEY PAD
KPL	KICK PLATE
LA	LOCK ASTRAGAL
LS	LOCKSET
PH	PANIC HARDWARE
PNT	PAINT
RE	RELOCATED ITEM
TG	TEMPERED GLASS
TH	THRESHOLD
TR	TO REMAIN
U/S	UNDERSIDE
WS	WEATHER STRIPPING
WMC	WALL MOUNTED CAMERA
W/	WITH

NO	REVISIONS	DATE
1	ISSUED FOR TENDER	2020-06-01

DRAWINGS ARE NOT TO BE SCALED. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE ARCHITECTS BEFORE PROCEEDING WITH THE WORK.
THE USE OF THIS DRAWING OR PART THEREOF IS FORBIDDEN WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECTS.

HARRISON PUBLIC SCHOOL
DOOR REPLACEMENT

59 REXWAY DRIVE
GEORGETOWN, ONTARIO. L7G 1P9

DOOR SCHEDULE, DOOR AND FRAME TYPES, AND DETAILS

GRGURIC ARCHITECTS INCORPORATED

28 KING STREET EAST, UNIT B
STONEY CREEK, ONTARIO, L8G 1J8
Tel. 905-664-8735 Fax. 905-664-8737
Web: www.2gai.com

SCALE: AS NOTED	PROJECT: 2020-12
DATE: APR, 2020	
DRAWN DW	DRAWING A1.00
CHECKED J.G.	
PRINT DATE	05/26/20

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ASBESTOS ABATEMENT SPECIFICATIONS
HARRISON PUBLIC SCHOOL

ASBESTOS ABATEMENT SPECIFICATIONS
Harrison Public School

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At Rear:

Drawing No. 30049846-1 - Locations of Work Areas – First Floor Plan

1.0 PART 1 – GENERAL

1.1 GENERAL

.1 The requirements as set out in these specifications may, at times, exceed the procedures detailed in the various applicable regulations. All work shall be done in compliance with the specifications AND the regulations. Should there be any discrepancy or conflict between the documents, the most stringent shall apply.

1.2 OUTLINE OF WORK

.1 The intent of the work is to remove select asbestos-containing materials to the extent practicable, in designated areas in the facility prior to renovations.

.2 Replacement of removed materials is not part of this contract.

.3 Coordinate all work with the General Contractor and sub trades as required.

.4 Provide all supervision, labour, equipment, tools, materials, waste management, haulage and disposal, and other services, as required, for undertaking and completing all of the work, as detailed below.

.5 **Work Area – Doors at Exits E1, E4, E5, E9, E10, E11, E12, E13, E15, E16 and E17**

.1 Prepare the areas as indicated above and on the attached floor plan for Type 1 asbestos removal operations.

.2 Supply and install scaffolding, as required, in accordance with all applicable regulations, in order to provide sufficient and safe access to the work areas.

.3 Using hand tools, remove and dispose the followings as asbestos waste:

.1 All asbestos-containing caulking applied to the interior and exterior sides of door frames in Exits E1, E9 and E17 and remnant drywall with asbestos-containing joint compound on drywall walls located above door frames attached to removed caulking in Exits E1 and E9.

.2 All asbestos-containing caulking applied to the exterior sides of the door frames in Exits E4, E5, E10, E11, E12, E13, E15 and E16.

.3 All non-asbestos-containing caulking applied to the interior sides of door frames and remnant drywall with asbestos-containing joint compound on drywall walls located above door frames attached to removed caulking in Exits E4 and E16.

.4 All non-asbestos-containing caulking applied to the interior sides of door frames and remnant asbestos-containing textured plaster on walls located above door frames attached to removed caulking in Exits E10 and E13.

.4 During caulking removal operations, care must be to limit damage to asbestos-containing joint compound on drywall walls located above the interior side of door frames in Exits E1, E4, E9, and E16, to asbestos-containing textured plaster on walls located above the interior side of door frames in Exits E10 and E13, to

asbestos-containing vinyl floor tiles located below door frames in Exits E11 and E12 and to asbestos-containing vinyl floor tiles and associated asbestos-containing mastic located below door frames in Exits E4 and E5.

.6 Caulking contains 1% to 2% chrysotile asbestos. Joint compound on drywall applications contains 1.1% chrysotile. Textured plaster contains 2.4% chrysotile asbestos. Vinyl floor tiles contain 0.7% to 2.7% chrysotile asbestos. Mastic on vinyl floor tiles contains 1.1% chrysotile asbestos.

.7 All waste is to be removed from the site and disposed. Asbestos waste disposal bins are not to be left on School property unless fully enclosed with an integral metal roof system and locked. Disposal bins must be removed immediately on completion of work.

.8 Schedule

.1	Mobilization	To be Coordinated with the General Contractor
.2	Complete Work and Demobilization	To be Coordinated with the General Contractor

1.3 GENERAL REQUIREMENTS

.1 The location and availability of utilities including water, sewer and electrical power is to be determined on site. The Asbestos Contractor shall co-operate with all others on site. Should there be any disagreement, or should Contractors be unable to reach a satisfactory working arrangement, the Asbestos Consultant shall determine the manner for proceeding. The Asbestos Contractor shall not be entitled to any additional payment.

.2. The Asbestos Contractor is responsible for making all arrangements, and for paying for the disposal of all waste materials in accordance to all applicable government laws and regulations including local, provincial and federal.

.3 The Asbestos Contractor is advised that extended hours of work may be required to meet the schedules as detailed in the Scope of Work and shall allow for the cost thereof including shift premiums and overtime. The Asbestos Consultant shall be advised in writing at least four days in advance of the proposed working hours.

.4 The Asbestos Contractor shall furnish and post on site the name and current phone number of an authorized representative(s) who can be contacted on a 24-hour basis in case of an emergency.

.5 All precautions will be taken to prevent the spread of contaminated material and to protect all parties including Asbestos Contractor's personnel, Owner's employees and the public from asbestos dust exposure during the course of the work. The documents outline the minimum levels of precaution to be taken.

.6 **All work shall be done in compliance with the specifications and the Ontario Regulation 278/05 – *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations* – made under the *Occupational Health and Safety Act***. Should there be any discrepancy or conflict between the documents, the most stringent shall apply.

.7 Contract conditions include, but are not limited to, complying with all Regulations, taking all precautions necessary to control the release of asbestos fibres within the work areas, preventing the release of asbestos fibres outside the work areas, and providing appropriate protection from exposure to asbestos fibres for all parties. Failure to meet any of these conditions will be considered a fundamental breach of the Contract.

.8 The Asbestos Consultant will visit the site at his/her discretion to familiarize himself/herself with the progress and quality of the Work and to determine if the Work is proceeding in accordance with the Contract Documents.

.9 The Asbestos Consultant shall have the authority to immediately stop the Work through a written instruction if, in his opinion, the Work does not conform to the requirements of the Contract Documents, or if continuance of the Work could subject the Owner, his employees or the public to a hazardous condition. The Work shall not recommence until such time as the deficiency or hazardous situation has been corrected and a written notice to proceed has been issued by the Asbestos Consultant.

.10 If the Asbestos Contractor fails to comply with requirements dealing with the control of asbestos fibres and the health and safety of Asbestos Contractor employees, Asbestos Consultant and Owner personnel or the Public, the Owner, or the Owner's representative, may verbally instruct the Asbestos Contractor to cease work immediately with written confirmation to follow within two working days. If the Asbestos Consultant gives a written statement to the Owner and the Asbestos Contractor that sufficient cause exists, the Owner may notify the Asbestos Contractor in writing that he is in default of his contractual obligations.

.11 Any employee shall be replaced, at the written request of the Asbestos Consultant, if working, or causing others to work, in violation of O.Reg. 278/05.

.12 The Asbestos Contractor's insurance coverage limits, per occurrence, shall equal or exceed the following and shall name the Owner and Arcadis Canada Inc. as additional insureds:

.1 General Liability $5 million;
.2 Automotive Liability $2 million;
.3 Pollution Liability $5 million including asbestos operations.

.13 The supervisor must have proven experience and proficiency in the type of Work being undertaken under this Contract.

.14 The supervisor shall be replaced, at the written request of the Asbestos Consultant, if found to be incompetent or inattentive to the needs of the project.

.15 Where standards of performance are specified or implied and the Work does not comply with the performance specified or implied, such deficiencies shall be corrected as directed by the Asbestos Consultant. Any subsequent testing shall be done at the Asbestos Contractor's expense.

1.4 DEFINITIONS

.1 *HEPA Vacuum:*

.1 High Efficiency Particulate Aerosol (HEPA) filtered vacuum equipment acceptable to Health and Welfare Canada and meeting U.S. Military Standard 282. This vacuum

equipment shall have a filtering system capable of collecting and retaining asbestos fibres to an efficiency of 99.97% for fibres of 0.3 micrometer or larger.

.2 *Polyethylene sheeting sealed with tape:*

.1 Polyethylene sheeting of thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through the sheeting into a clean area.

.3 *Inspector:*

.1 Representative of Arcadis Canada Inc. (Arcadis) designated by the owner to provide inspection and air monitoring of the Contractor's work.

.4 *Authorized Visitor:*

.1 Representative of the building owner, Arcadis, and/or persons representing regulatory agencies.

.5 *Amended Water:*

.1 Water with a non-ionic surfactant added to reduce water tension to allow thorough wetting of asbestos fibres.

.6 *Airlock:*

.1 A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area typically consisting of two curtained doorways at least 1.5 m apart.

.7 *Curtained Doorways:*

.1 An arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

.2 All free edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure proper closing. Each polyethylene sheet shall overlap openings an additional 1/3 of the doorway width.

.8 *Operating Area:*

.1 Area where no removal or repair Work is underway.

.9 *Clean Area:*

.1 Either an operating area or an area in which removal Work has already been completed.

.10 *Work Area:*

.1 Where the actual removal of asbestos-containing materials take place.

.11 *Negative Pressure:*

.1 A system which extracts air from the work area and discharges this air directly outside the building, sufficient to maintain a minimum pressure differential of 0.5 mm (0.02 inch) of water column relative to adjacent areas outside of work areas. This air extraction system is to be equipped with a High Efficiency Particulate Aerosol filtering system before discharge.

.12 *Confined Space:*

.1 A fully or partially enclosed space,

.1 that is not both designed and constructed for continuous human occupancy, and

.2 in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it.

1.5 REGULATORY AGENCIES

.1 Comply with Federal, Provincial, and local requirements pertaining to asbestos, provided that in any case of conflict among those requirements or with these Specifications the more stringent requirement shall apply. These include, but are not limited to, the following:

.1 Ontario Ministry of Labour, Occupational Health and Safety Division, *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations*, O.Reg. 278/05 – made under the *Occupational Health and Safety Act.*

.2 Ontario Ministry of the Environment *Regulation 347* (previously 309) under the Environmental Protection Act (as amended by O.Reg. 175/83; O.Reg. 574/84; O.Reg. 322/85), June 17, 1985.

.3 Government of Canada *Regulations Respecting the Handling, Offering for Transport and Transporting of Dangerous Goods*. (Extract from the Canada Gazette Part II, dated February 6, 1985.)

.4 Government of Ontario *Occupational Health and Safety Act, 1978 and Regulations for Construction Projects*.

.5 Office of the Fire Commissioner of Canada.

.6 Ontario Electrical Safety Code.

.7 Regulation 647 RRO ‘70 of the Plumbing Code.

.2 *Patents:*

.1 It shall be the Contractor's responsibility to ensure that all applicable patent laws are complied with.

1.6 FIRE SAFETY PLAN

.1 Prior to initiating any work on the site, the Contractor shall prepare and submit in writing to the Engineer a Fire Safety Plan. The Plan shall be in accordance to the requirements set forth in Section 2.14, Construction and Demolition Sites, of the National Fire Code and shall include:

.1 the designation and organization of site personnel to carry out fire safety duties, including fire water services if applicable;

.2 the emergency procedures to be used in the case of fire, including:

.1 sounding the fire alarm;

.2 notifying the fire department;

.3 instructing site personnel on procedures to be followed when the alarm sounds; and

.4 fire fighting procedures;

.3 the control of fire hazards in and around the building;
.4 maintenance of fire fighting facilities; and

.5 special requirements as may be identified by the building owner.

.2 Implementation of the Fire Safety Plan shall be the sole responsibility of the Contractor, and the above shall, in no way, limit the Contractor's statutory and regulatory obligations. During the work, the Fire Safety Plan shall be prominently displayed at the site and its requirements included in site safety training and awareness programs.

1.7 SUBMITTALS

1.7.1 Submittals Before Commencing Work

.1 The following documentation shall be submitted to the Inspector with a dated covering letter listing attachments a minimum 48 hours prior to commencement of the Work:

.1 *Permits and Notifications:*

.1 All necessary permits for transporting and disposal of asbestos waste. Submit proof satisfactory to Inspector that suitable arrangements have been made to receive and properly dispose of asbestos waste. Copies of all Notifications required by Section 1.11.

.2 *Material Safety Data Sheets:*

.1 Material Safety Data Sheets, or equivalent, for any sealant, surfactant or other material proposed for use. Include a separate attachment for each

sheet indicating the specific worker protective equipment proposed for use with the material indicated.

.3 *Supervisory Personnel:*

.1 Names of supervisory personnel who will be responsible for work area(s). **One of these supervisors must remain on site at all times asbestos removal or cleanup is occurring**. Submit proof that supervisory personnel have over 2000 hours experience on asbestos abatement projects, have performed supervisory functions on at least two other asbestos projects and have achieved the level of training as set out by the Regulation.

.4 *Schedule:*

.1 Provide a bar chart indicating planned progress for critical activities as required under **Scope of Work** as well as additional information listed below a minimum of 48 hours prior to commencement of any preparatory work indicating:

.1 shifts to be worked;

.2 proposed workforce;

.3 starting date;

.4 estimated date of commencement of asbestos removal;

.5 estimated date of completion of asbestos removal;

.6 estimated completion date.

.5 *Insurance:*

.1 Provide a Certificate signed by the insurance agency naming the Owner and Arcadis Canada Inc. as co-insureds.

2. The Asbestos Contractor's insurance coverage limits, per occurrence, shall equal or exceed the following:

.1 General Liability $5 million;
.2 Automotive Liability $2 million;
.3 Pollution Liability $5 million including asbestos operations.

.3 The Asbestos Contractor must provide thirty (30) days notice of cancellation or amendment of coverage.

.6 *Fire Safety Plan*:

.1 In accordance to Article 1.6 above.

.7 *Confined Space:*

.1 If a work area, or part thereof, is a confined space, the contractor shall submit:

.1 a co-ordination document (see Section 1.13.1.1);

.2 a written program (see Section 1.13.1.2);

.3 a written plan (see Section 1.13.1.4).

.8 *Asbestos Training:*

.1 A letter certifying that:

(a) every worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Worker Training Program approved by the Ministry of Training, Colleges and Universities; and

(b) every supervisor of a worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Supervisor Training Program approved by the Ministry of Training, Colleges and Universities. O.Reg. 278/05, s. 20(1).

1.7.2 Submittals Before Commencing Asbestos Removal

.1 If specified, results of integrity tests of fan/filter units and HEPA vacuums.

.2 Proposed Work Area emergency exit procedures.

.3 If specified, proposed locations of decontamination facilities.

.4 If specified, evidence (letter or other suitable documentation) of proper construction, inspection and installation of GFI panel by licensed electrician in compliance to all regulatory requirements and codes.

1.7.3 Submittals Upon Completion of Work

.1 Asbestos waste haulage and disposal documentations including Bills of Lading, waste transfer documents and dump receipts.

.2 All documentation as specified in the contract General Conditions including, but not limited to, Workplace Safety and Insurance Board Certificate, Statutory Declarations and Proof of Publication of Substantial Performance.

1.8 EXISTING CONDITIONS

.1 Caulking contains 1% to 2% chrysotile asbestos. Joint compound on drywall applications contains 1.1% chrysotile. Textured plaster contains 2.4% chrysotile asbestos. Vinyl floor tiles contain 0.7% to 2.7% chrysotile asbestos. Mastic on vinyl floor tiles contains 1.1% chrysotile asbestos.

.2 Existing conditions are documented in a report prepared by Arcadis Canada Inc. for the Halton District School Board entitled *"Pre-Renovation Designated Substances and*

Hazardous Materials Survey, Harrison Public School, 59 Rexway Drive, Georgetown, Ontario" dated July 17, 2020 which is included with the tender documents.

.3 Masonry applications may contain silica. Paint applications may contain lead and mercury. Appropriate dust control procedures and respiratory protective equipment are to be used if disturbing these materials.

1.9 RESTRICTIONS

.1 Do not allow smoking, eating or drinking in the work area.

.2 Do not allow entry to work area by unauthorized persons.

.3 Compressed air shall not be used in the work area.

.4 Open flames will not be permitted in the work area (including but not limited to torches and propane-fired heaters).

1.10 WORKER PROTECTION

.1 *Instructions:*

.1 Before commencing Work, instruct workers in all aspects of work procedures and protective measures.

.2 *Respiratory Protection:*

.1 Provide workers with personally issued and marked respiratory equipment acceptable to the Occupational Health and Safety Division of the Ontario Ministry of Labour, suitable for the asbestos exposure in the work area.

.2 Ensure that suitable respiratory protective equipment is worn by every worker who enters the work area. A respirator provided by an employer and used by a worker:

.1 shall be in accordance to O.Reg. 278/05, Section 13, respirators.

.2 shall be fitted so that there is an effective seal between the respirator and the worker's face;

.3 shall be assigned to a worker for the worker's exclusive use;

.4 shall be used and maintained in accordance with the procedures specified by the equipment manufacturer;

.5 shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary;

.6 shall have damaged or deteriorated parts replaced prior to being used by a worker; and

.7 when not in use, shall be stored in a convenient, clean and sanitary location.

.3 *Protective Clothing:*

.1 Provide workers with protective clothing which shall:

.1 be worn by every worker who enters the work area,

.2 be made of a material which does not readily retain nor permit penetration of asbestos fibres,

.3 consist of full body covering including head covering with snug fitting cuffs at the wrists, ankles and neck,

.4 include suitable footwear, and

.5 be repaired or replaced if torn.

1.11 NOTIFICATIONS

.1 Notify, in writing, the local Fire Department of the extent of the work, including a copy of the Fire Safety Plan detailed in Article 1.6 above.

.2 Notify, orally and in writing, an inspector at the office of the Ministry of Labour nearest the work place of the operation. O.Reg. 278/05, Section 11.

.1 The written notice required by subsection (1) shall set out:

.1 the name and address of the person giving the notice;

.2 the name and address of the owner of the place where the work will be carried out;

.3 the municipal address or other description of the place where the work will be carried out sufficient to permit the inspector to locate the place, including the location with respect to the nearest public highway;

.4 a description of the work that will be carried out;

.5 the starting date and expected duration of the work; and

.6 the name and address of the supervisor in charge of the work.

.3 Notify the Inspector a minimum of eight hours prior to initiation of the following phases of the project:

.1 commencement of asbestos removal;

.2 commencement of sealant application;

.3 dismantling of the enclosure; and

.4 removing asbestos waste from the work area.

1.12 PROTECTION, REPAIR AND REPLACEMENT OF EQUIPMENT AND MATERIALS

.1 All equipment within and surrounding the work area shall be suitably protected by the Contractor during the work periods.

.2 All equipment damaged by the Contractor shall be replaced by the Contractor at no additional cost to the Owner.

1.13 CONFINED SPACES

Not Applicable.

2.0 PART 2 – PRODUCTS

2.1 MATERIALS

.1 *Polyethylene:*

.1 In 0.15 mm (6 mil) minimum thickness unless otherwise specified; in sheet size to minimize joints.

.2 *Tape:*

.1 Reinforced duct tape suitable for sealing polyethylene under both wet conditions using amended water, and dry conditions.

.3 *Wetting Agent:*

.1 50% polyoxethylene ester and 50% polyglycol or polyxyethylene ether, or equivalent approved product, and shall be mixed with water to a concentration to provide adequate penetration and wetting of asbestos-containing material.

.4 *Asbestos Waste Receptors:*

.1 0.15 mm (6 mil) minimum thickness appropriately labelled, sealable polyethylene bags and 0.15 mm (6 mil) minimum thickness sealable clear polyethylene bags.

.5 *Rip-Proof Polyethylene:*

.1 0.20 mm (8 mil) fabric made up from 0.13 mm (5 mil) weave and 2 layers 0.04 mm (1.5 mil) poly laminate, in sheet size to minimize joints.

.6 *Sealant:*

.1 Slow-drying sealant which remains tacky on surface for a minimum of 8 hours for purpose of trapping residual airborne fibre during settling period. Product must have flame spread and smoke development ratings both less than 50. **Product shall leave a clear finish when dry. Acceptable products "Childers Chil-Lock CP-240" or equivalent.**

2.2 EQUIPMENT

.1 All equipment brought on site must be thoroughly clean and free of all fibre, asbestos or otherwise, to the satisfaction of the Field Inspector. The Contractor will be fully responsible for the replacement of equipment rejected by the Inspector and for all costs resulting from site contamination due to dirty or faulty equipment.

.2 *Airless Sprayer:*

.1 Spray equipment for the application of amended water and sealant such as Graco Hydrospray or equivalent:

.1 Fine atomizing spray nozzle: Nozzle for airless sprayer capable of delivering not less than 4.5 L per minute of fine particle spray of amended water.

.3 *Garden Sprayer:*

.1 Hand pump-type pressure-can garden sprayer fabricated out of either metal or plastic equipped with a wand at the end of a hose that can deliver a stream or spray of liquid under pressure. **Only to be used on small removal and repair projects with the approval of the site inspector.**

.4 *HEPA Vacuum:*

.1 High Efficiency Particulate Aerosol filtered vacuum equipment. Must have a filtering system capable of collecting and retaining asbestos fibres to an efficiency of 99.97% for fibres of 0.3 um or larger. HEPA filters must have been individually tested and certified by the manufacturer.

.2 All HEPA vacuums brought onto the job site shall be visibly clean, shall be in a good state of repair and shall be maintained in such state through completion of the project.

.5 *Glovebag:*

.1 Prefabricated, purposely made, 0.20 mm minimum thickness, polyvinyl chloride bag with integral 0.25 mm thick polyvinyl chloride gloves.

.2 Bag equipped with reversible double-pull, double-throw zipper on top to facilitate installation on pipe and progressive movement along pipe, with straps for sealing ends of bag around pipe, and with plastic flap under zipper for strength on pipe and to provide effective seal and with “ziploc” feature. Bags shall be secured using manufacturer’s prescribed securing devices. Approval must be obtained from the Inspector for use of Glovebags. Bag must be acceptable to the Inspector for use.

.3 Bag must have valves to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.

.6 *Negative Pressure Units:*

.1 Exhaust units fitted with High Efficiency Particulate Aerosol (HEPA) filters used to effect a negative pressure differential in the work area as compared to the immediate surrounding or clean area. The filtering system must be capable of collecting and retaining asbestos fibres to an efficiency of 99.97% for fibres of 0.3 um or larger. The HEPA filters must have been individually tested and certified by the manufacturer and bear a label certifying performance. The unit is to be fitted with instrumentation to indicate pressure differential across the HEPA filter with an audible alarm to sound at a preset low differential pressure.

.2 Construction of HEPA filter/fan cabinet units shall be airtight and all joints shall be caulked. The gasket seal between the filter housing and the retaining frame inside the cabinet shall provide a zero-leakage seal to avoid filter bypassing.

.3 **Each negative pressure unit shall be integrity tested at the work site prior to commencement of asbestos removal.** The procedure must include the testing of the integrity of the entire cabinet. Written confirmation of the test results are to be provided to the Inspector. Retesting may be requested by the Inspector and performed by the Contractor should the unit be damaged or modified during the work.

.7 *Differential Pressure Recorder:*

.1 Instrument to monitor and record the differential pressure between the Work Area and Clean Area.

.1	sensitivity:	0.025 mm (0.001 inches) WC increments between +0.25 mm to -2.5 mm (+0.010 to -0.100 inches) WC
.2	accuracy:	+/- 1 %
.3	pressure alarms:	audible high and low level alarm programmable within operating range
.4	printout:	minimum 24 hr period at 15 minute intervals

.8 *Ground Fault Panel:*

.1 Electrical Panel equipped with ground fault circuit breakers of sufficient capacity to power all electrical equipment and lights in work area. All breakers shall have 5 mA ground fault protection. Panel should be complete with all necessary accessories including ground fault interrupter lights, test switch to ensure unit is working, and reset switch. Ground fault receptacles on extension cords shall not be used without written authorization by the Consultant.

.2 The GFI Panel must be constructed under the direction of a licensed Electrician and inspected by a licensed Electrician on a regular basis. Evidence of such construction and inspection shall be submitted to the Consultant prior to installation of the Panel on site.

3.0 PART 3 – EXECUTION

Not Applicable.

3.1 GLOVEBAG REMOVAL METHOD

Not Applicable.

3.2 TYPE 2 ENCLOSURE METHOD

Not Applicable.

3.3 TYPE 1 OPERATION

.1 *Preparation*

.1 Control the spread of dust from the work being performed by use of drop sheets, keeping doors closed, providing signage, etc. Ensure that appropriate equipment and materials are at hand.

.2 Restrict access to the work area using rope barriers, barricades, and other appropriate measures.

.3 Disable ventilation systems servicing the work area.

.4 Provide and wear a non-powered air purifying respirator with high efficiency cartridges approved for use with asbestos and disposable coveralls including hood, elasticized cuffs and zipper over work clothes.

.2 *Asbestos Removal and Cleanup*

.1 Do not eat, drink, chew or smoke within the work area.

.2 For caulking removal: place polyethylene sheet under work area. Apply amended water as required to reduce dust. Remove material by hand with minimal breakage and place immediately into waste receptor. Ensure that all asbestos debris is removed from adjacent building materials.

.3 Do not allow waste to accumulate.

.4 Clean dust and debris at regular intervals and at the end of each shift with a damp cloth or HEPA vacuum.

.6 Ensure that there is no visible airborne dust in the work area during the removal and cleanup operation.

.5 All duct tape, polyethylene sheets, disposable clothing and other consumables used for, and during the removal of asbestos shall be contained and disposed as asbestos waste.

.6 Wash hands and face prior to taking breaks and at completion of the work before leaving the work area. Damp-wipe the respirator after use and store in an appropriate place.

3.4 WASTE DISPOSAL

.1 Asbestos-containing wastes shall be disposed of in accordance with procedures established by the Ontario Ministry of the Environment *Regulation 347 (as amended) under the Environmental Protection Act* and the Government of Canada *Transportation of Dangerous Goods Regulations*.

.2 All waste is to be removed from the site and disposed. Disposal containers are not to be left on the property unattended unless fully enclosed and locked. Bins must be removed immediately on completion of work.

.3 Both sides of every vehicle used for the transportation of asbestos and every waste container must display in large easily legible letters that contrast in colour with the background the word "CAUTION" in letters not less than 10 cm in height and the words:

CONTAINS ASBESTOS FIBRES
Avoid Creating Dust and Spillage
Asbestos May Be Harmful To Your Health
Wear Approved Protective Equipment

.4 Both sides of every waste container must display in large easily legible letters the words **'ASBESTOS, WHITE, PRODUCT IDENTIFICATION NUMBER 2590'** or **'ASBESTOS, BLUE, PRODUCT IDENTIFICATION NUMBER 2212'** in accordance with the type of asbestos being transported.

.5 Every vehicle used for the transportation of asbestos waste shall display a Class 9 placard on the front, back and two sides of the vehicle.

.6 The waste must be transported in a fully-enclosed truck, or alternatively, in a waste disposal skip. The driver must be familiar with cleanup and handling procedures and be trained to deal with spills or container breakage.

.7 The truck must be equipped with a shovel and broom, wetting agent, protective clothing, respiratory protective equipment, polyethylene bags of at least 0.15 mm (6 mil) thickness, and bag closures and duct tape.

.8 All waste must be transported with a **Bill of Lading** directly from the work area to the waste disposal site. The Bill of Lading is to indicate the source and type of asbestos, the Carrier, the amount, the destination (disposal site) and date all in accordance to applicable regulations. A copy of the Bill of Lading and disposal site receipt is to be provided to the Inspector.

3.5 AIR MONITORING

.1 Air tests will be taken at the discretion of the Asbestos Consultant using the Phase Contrast Microscopy (PCM) method from the time asbestos-containing materials may be disturbed until the final visual inspection of the work areas.

.1 *Outside Asbestos Removal Work Areas:*

.1 The maximum allowable fibre concentration outside the Work Areas during asbestos removal or cleanup shall be 0.05 f/cc. Should readings exceed this value, the work shall stop at the discretion of the inspector and proceed only after the cause of the high fibre counts has been remedied.

.2 All costs associated with the cleaning, monitoring, and disruption caused by excessive fibre levels outside the Work Area and related to the work, are to be borne by the Asbestos Contractor including but not limited to:

.1 thorough cleaning with wet wiping and HEPA vacuuming by the Asbestos Contractor to the extent and satisfaction of the Inspector,

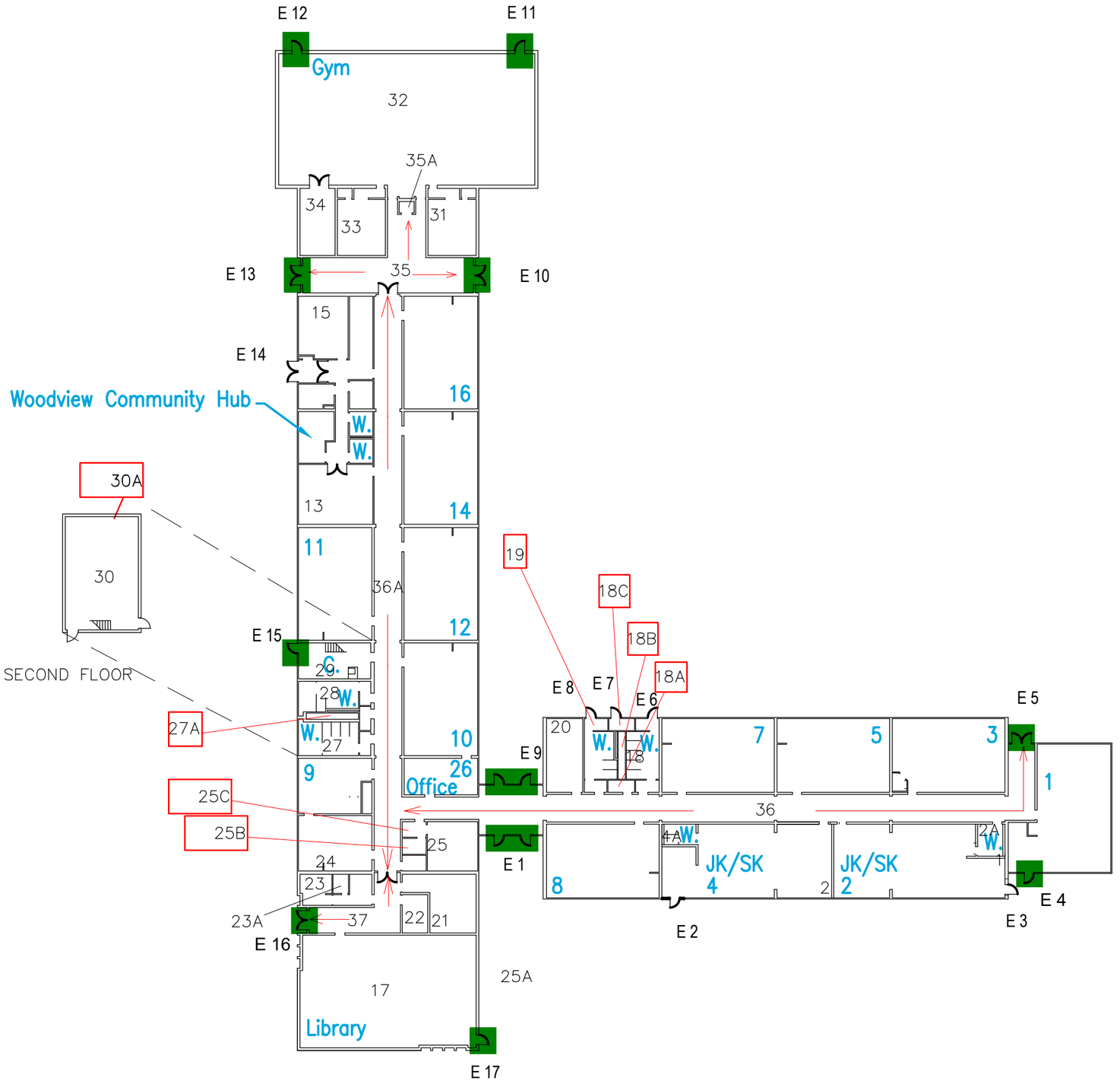
.2 all activities deemed necessary by the Inspector including area isolation, personnel relocation, additional visual inspections and air monitoring to confirm that the area has been adequately cleaned,

.3 disruption of plant production, office routine, and delays.

.2 *Final Clearance Test:*

Not Applicable.

END OF SECTION



Scale

5 0 1 2 3 4 5 10 15 20
METRES

5 0 3 10 20 30 40 50
FEET

LEGEND:

16 FUNCTIONAL SPACE

WORK AREA

ARCADIS

HALTON DISTRICT SCHOOL BOARD

ASBESTOS ABATEMENT SPECIFICATIONS

LOCATIONS OF WORK AREAS

HARRISON PUBLIC SCHOOL
59 REXWAY DRIVE, GEORGETOWN, ON

FIRST AND SECOND FLOOR PLAN

Drawn By: A.N.	Approved By: J.D.	Project No: 30049846	
Date: JULY 2020	Scale: AS SHOWN	Drawing No: 30049846-1	

C:\Users\ymb2640\BIM 360\Arcadis\ANA-Halton District School Board\Project Files\Harrison P.S\2020\30000861.00002\01-DWG\30000861 Harrison P.S 2019 Updated ACM Drawing.dwg LAYOUT: LAYOUT2-LAYOUT1 SAVED: 1/17/2020 11:51 AM
PLOTTED: 1/17/2020 11:54 AM BY: Y M, BABU

ARCADIS Design & Consultancy for natural and built assets

HALTON DISTRICT SCHOOL BOARD

PRE-RENOVATION DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY

HARRISON PUBLIC SCHOOL

59 REXWAY DRIVE, GEORGETOWN, ONTARIO

July 17, 2020

30049846

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PRE-RENOVATION DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY

Harrison Public School
59 Rexway Drive, Georgetown, Ontario

Prepared for:

Halton District School Board

J.W. Singleton Education Center

2050 Guelph Line

Burlington, ON L7P 5A8

Attention: Mr. Tony Cunha

Prepared by:

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Our Ref.:

30049846

Date:

July 17, 2020

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C Summary of Asbestos, Lead and Silica Work Classifications

1 INTRODUCTION

Arcadis Canada Inc. (Arcadis) was retained by the Halton District School Board to conduct a pre-renovation designated substances and hazardous materials survey in the designated study areas of Harrison Public School located at 59 Rexway Drive in Georgetown, Ontario.

The information in this report is to be provided to all bidders on a project in accordance with the requirements of the *Occupational Health and Safety Act*.

The site is single-storey masonry structure, originally built in 1956 with additions built in 1958 and 1971.

It is our understanding that the replacement of exterior doors is scheduled to take place in designated areas of the building. The designated study areas were limited to areas affected by the proposed renovation project and are based on information provided by the HDSB. The survey included inspecting building materials in the designated study areas that are anticipated to be affected by the renovation project.

The designated study areas and eras of construction are shown on the floor plans provided in Appendix A.

The survey was undertaken to report on the presence or suspected presence of readily observable designated substances and hazardous materials.

1.1 Scope of Work

The scope of work for our investigation included:

- review of existing information;
- investigation of readily-accessible areas in the designated study areas for the presence of designated substances and hazardous materials used in building construction materials;
- obtaining representative bulk samples of materials suspected of containing asbestos and paint chip samples;
- laboratory analyses of bulk samples for asbestos content;
- laboratory analyses of paint chip samples for lead content; and
- preparation of a report outlining the findings of the investigation.

Mr. Shubham Shringi of Arcadis visited the site on June 10, 2020 to conduct the designated substances and hazardous materials survey at Harrison Public School.

2 REGULATORY DISCUSSION AND METHODOLOGY

Ontario Occupational Health and Safety Act (OHSA)

The Ontario *Occupational Health and Safety Act* (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, but are not limited to:

- 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)]; and
- 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. Compliance with the OHSA and its regulations requires action to be taken where there is a designated substance hazard on a construction project.

Section 30 of the OHSA requires the owner of a project to determine if designated substances are present on a project and, if so, to inform all potential contractors as part of the bidding process. Contractors who receive this information are to pass it onto other contractors and subcontractors who are bidding for work on the project.

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

The *Regulation for Construction Projects*, O.Reg. 213/91, applies to all construction projects. The following sections of the regulation would apply to situations where there is the potential for workers to be exposed to designated substances:

Section 14	(5)	A competent person shall perform tests and observations necessary for the detection of hazardous conditions on a project.
Section 21	(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.
	(2)	A worker's employer shall require the worker to comply with subsection (1).

(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.

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 (1) A project shall be adequately ventilated by natural or mechanical means,

(a) if a worker may be injured by inhaling a noxious...dust or fume;

(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.

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 *Designated Substance Regulation* (O.Reg. 490/09) specifies occupational exposure limits (OELs) for designated substances and requires an assessment and a control program to ensure compliance with these OELs.

Although, O.Reg. 490/09 and the OELs 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".

Other regulatory requirements (and guidelines) which apply to control of exposure to designated substances and hazardous materials are referenced in the sections below.

2.1 Asbestos

Asbestos has been widely used in buildings, both in friable applications (materials which can be crumbled, pulverized or powdered by hand pressure, when dry) such as pipe and tank insulation, sprayed-on fireproofing and acoustic texture material and in non-friable manufactured products such as floor tile, gaskets, cement board and so on. The use of asbestos in friable applications was curtailed around the mid-1970s and, as such, most buildings constructed prior to about 1975 contain some form of friable construction material with an asbestos content. The use of asbestos in certain non-friable materials continued beyond the mid-1970s.

Control of exposure to asbestos is governed in Ontario by Regulation 278/05 – *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations*. Disposal of asbestos waste

(friable and non-friable materials) is governed by Ontario Regulation 278/05 and by Ontario Regulation 347, *Waste Management – General*. O.Reg. 278/05 classifies asbestos work operations into three types (Type 1, 2 and 3), as shown in Table C-1 in Appendix C, and specifies procedures to be followed in conducting asbestos abatement work.

2.2 Lead

Lead is a heavy metal that can be found in construction materials such as paints, coatings, mortar, concrete, pipes, solder, packings, sheet metal, caulking, glazed ceramic products and cable splices. Lead has been used historically in exterior and interior paints.

The *Surface Coating Materials Regulations* (SOR/2016-193) made pursuant to the Canada Consumer Product Safety Act states that a surface coating material must not contain more than 90 mg/kg total lead. Health Canada defines a lead-containing surface coating as a paint or similar material that dries to a solid film that contains over 90 mg/kg dry weight of lead.

Information from the United States Occupational Health and Safety Administration (OSHA) suggests that the improper removal of lead paint containing 600 mg/kg lead results in airborne lead concentrations that exceed half of the permissible exposure limit. Lead concentrations as low as 90 mg/kg may present a risk to pregnant women and children[1].

The *National Plumbing Code* allowed lead as an acceptable material for pipes until 1975 and in solder until 1986.

The Ministry of Labour *Guideline, Lead on Construction Projects*, dated April 2011, provides guidance in the measures and procedures that should be followed when handling lead containing materials during construction projects. In the guideline, lead-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of lead, as shown in Appendix C, Table C-2. Any operation that may expose a worker to lead that is not a Type 1, Type 2, or Type 3b operation, is classified as a Type 3a operation.

2.3 Mercury

Mercury has been used in electrical equipment such as alkaline batteries, fluorescent light bulbs (lamps), high intensity discharge (HID) lights (mercury vapour, high pressure sodium and metal halide), “silent switches” and in instruments such as thermometers, manometers and barometers, pressure gauges, float and level switches and flow meters. Mercury-containing lamps, the bulk of which are 1.22 m (four foot) fluorescent lamps contain between 7 and 40 mg of mercury each. Mercury compounds have also been

(1) *Lead-Containing Paints and Coatings: Preventing Exposure in the Construction Industry.* WorkSafe BC, 2011.

used historically as additives in latex paint to protect the paint from mildew and bacteria during production and storage.

The intentional addition of mercury to Canadian-produced consumer paints for interior use was prohibited in 1991. Mercury may have remained in paints after 1991, however, as a result of impurities in the paint ingredients or cross-contamination due to other manufacturing processes. The *Surface Coating Materials Regulations* made under the *Hazardous Products Act* set a maximum total mercury concentration of 10 mg/kg (0.001 percent) for surface coating materials (including paint). This criterion level applies to the sale and importation of new surface coating materials.

Mercury-containing thermostats and silent light switches are mercury tilt switches which are small tubes with electrical contacts at one end of the tube. A mercury tilt switch is usually present when no switch is visible. Mercury switches often have the word “TOP” stamped on the upper end of the switch, which is visible after removing the cover plate. If mercury switches are to be removed, the entire switch should be removed and placed into a suitable container for storage and disposal.

Waste light tubes generated during renovations or building demolition and waste mercury from equipment must either be recycled or disposed of in accordance with the requirements of Ont. Reg. 347 - *Waste Management, General*.

Waste mercury in amounts less than 5 kg (per month) are exempt from the generator registration requirements prescribed by O.Reg. 347 – *Waste Management – General*. Waste mercury from mercury switches or gauges should, however, be properly collected and shipped to a recycling facility or disposed of as a hazardous waste. Removal of mercury-containing equipment (e.g., switches, gauges, controls, etc.) should be carried out in a manner which prevents spillage and exposure to workers.

2.4 Silica

Silica exists in several forms of which crystalline silica is of most concern with respect to potential worker exposures. Quartz is the most abundant type of crystalline silica. Some commonly used construction materials containing silica include brick, refractory brick, concrete, concrete block, cement, mortar, rock and stone, sand, fill dirt, topsoil and asphalt containing rock or stone.

The Ministry of Labour *Guideline, Silica on Construction Projects*, dated April 2011, provides guidance in controlling exposure to silica dust during construction activities. In the guideline, silica-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of respirable crystalline silica in the form of cristobalite, tridymite, quartz and tripoli as shown in Appendix C, Table C-3.

2.5 Vinyl Chloride

Vinyl chloride vapours may be released from polyvinyl chloride (PVC) products in the event of heating or as a result of decomposition during fire. PVC is used in numerous materials that may be found in building

construction, including, for example, piping, conduits, siding, window and door frames, plastics, garden hoses, flooring and wire and cable protection.

2.6 Acrylonitrile

Acrylonitrile is used to produce nitrile-butadiene rubber, acrylonitrile-butadiene-styrene (ABS) polymers and styrene-acrylonitrile (SAN) polymers. Products made with ABS resins which may be found in buildings include telephones, bottles, packaging, refrigerator door liners, plastic pipe, building panels and shower stalls. Acrylonitrile can be released into the air by combustion of products containing ABS.

2.7 Other Designated Substances

Isocyanates are a class of chemicals used in the manufacture of certain types of plastics, foams, coatings and other products. Isocyanate-based building construction materials may include rigid foam products such as foam-core panels and spray-on insulation and paints, coatings, sealants and adhesives. Isocyanates may be inhaled if they are present in the air in the form of a vapour, a mist or a dust.

Benzene is a clear, highly flammable liquid used mainly in the manufacture of other chemicals. The commercial use of benzene as a solvent has practically been eliminated, however it continues to be used as a solvent and reactant in laboratories.

Arsenic is a heavy metal used historically in pesticides and herbicides. The primary use in building construction materials was its use in the wood preservative chromated copper arsenate (CCA). CCA was used to pressure treat lumber since the 1940's. Pressure-treated wood containing CCA is no longer being produced for use in most residential settings.

Ethylene oxide is a colourless gas at room temperature. it has been used primarily for the manufacture of other chemicals, as a fumigant and fungicide and for sterilization of hospital equipment.

Coke oven emissions are airborne contaminants emitted from coke ovens and are not a potential hazard associated with building construction materials.

2.8 Polychlorinated Biphenyls (PCBs)

The management of equipment classified as waste and containing Polychlorinated Biphenyls (PCBs) at concentrations of 50 parts per million (mg/kg) or greater is regulated by Ontario Regulation 362*, Waste Management – PCBs*. Under this regulation, PCB waste is defined as any waste material containing PCBs in concentrations of 50 mg/kg or greater. Any equipment containing PCBs at or greater than this level, such as transformers, switchgear, light ballasts and capacitors, which is removed from service due to age, failure or as a result of decommissioning, is considered to constitute a PCB waste. Although current federal legislation (effective 1 July 1980) has prohibited the manufacture and sale of new equipment containing PCBs since that time, continued operation of equipment supplied prior to this date and containing PCBs is still permitted. Handling, storage and disposition of such equipment is, however, tightly regulated and must

be managed in accordance with provincial and federal government requirements as soon as it is taken out of service or becomes unserviceable.

In most institutional, commercial facilities and in smaller industrial facilities, the primary source of equipment potentially containing PCBs is fluorescent and H.I.D. light ballasts. Small transformers may also be present. In larger industrial facilities, larger transformers and switch gear containing, or potentially containing, PCBs may also be present.

PCBs were also commonly added to industrial paints from the 1940s to the late 1970s. PCBs were added directly to the paint mixture to act as a fungicide, to increase durability and flexibility, to improve resistance to fires and to increase moisture resistance. The use of PCBs in new products was banned in Canada in the 1970s. PCB amended paints were used in speciality industrial/institutional applications prior to the 1970s including government buildings and equipment such as industrial plants, radar sites, ships as well as non-government rail cars, ships, grain bins, automobiles and appliances.

Removal of in-service equipment containing PCBs, such as fluorescent light ballasts, capacitors and transformers, is subject to the requirements of the federal *PCB Regulations* (discussed below).

The *PCB Regulations*, which came into force on 5 September 2008, were made under the *Canadian Environmental Protection Act*, 1999 (CEPA 1999) with the objective of addressing the risks posed by the use, storage and release to the environment of PCBs, and to accelerate their destruction. The *PCB Regulations* set different end-of-use deadlines for equipment containing PCBs at various concentration levels.

The Regulations Amending the PCB Regulations and Repealing the Federal Mobile PCB Treatment and Destruction Regulations were published on 23 April 2014, in the Canada Gazette, Part II, and came into force on 1 January 2015. The most notable part of the amendments is the addition of an end-of-use deadline date of 31 December 2025 for specific electrical equipment located at electrical generation, transmission and distribution facilities.

When the PCB materials are classified as waste, jurisdiction falls under the Ontario Ministry of the Environment and Climate Change (MOECC) and O.Reg. 362. All remedial and PCB management work must be carried out under the terms of a Director's Instruction issued by an MOECC District Office (for quantities of PCB fluid greater than 50 litres). The PCB waste stream, regardless of quantity, must be registered with the MOECC, in accordance with O.Reg. 347, *General - Waste Management*. O.Reg. 362 applies to any equipment containing greater than 1 kg of PCBs.

2.9 Ozone-Depleting Substances (ODS) and Other Halocarbons

Ontario Regulation 463/10 – *Ozone Depleting Substances and Other Halocarbons*, applies to the use, handling and disposal of Class 1 ozone-depleting substances, including various chlorofluorocarbons (CFCs), halons and other halocarbons, Class 2 ozone-depleting substances, including various hydrochlorofluorocarbons (HCFCs) and halocarbons, and other halocarbons, including fluorocarbons (FCs) and hydrofluorocarbons (CFCs). The most significant requirements for handling of ozone-depleting substances (ODS) and other Halocarbons, which include, for example, refrigerants used in refrigeration equipment and chillers, include the following:

- certification is required for all persons testing, repairing, filling or emptying equipment containing ODS and other halocarbons;
- the discharge of a Class 1 ODS or anything that contains a Class 1 ODS to the natural environment or within a building is prohibited;
- the making, use of, selling of or transferring of a Class 1 ODS is restricted to certain conditions;
- the discharge of a solvent or sterilant that contains a Class 2 ODS is prohibited;
- the making, use of, selling of or transferring of a solvent or sterilant that contains a Class 2 ODS is restricted to certain conditions;
- fire extinguishing equipment that contains a halon may be discharged to fight fires, except fires for firefighting training purposes;
- portable fire extinguishing equipment that contains a halon may be used or stored if the extinguisher was sold for use for the first time before 1 January 1996;
- records of the servicing and repair of equipment containing ODS and other halocarbons must be prepared and maintained by the owner of the equipment; and
- equipment no longer containing ODS and other halocarbons must be posted with a notice completed by a certified person.

Ontario Regulation 347, *General – Waste Management*, has also been amended to provide for more strict control of CFCs. The requirements under the amended regulation apply primarily to the keeping of records for the receipt or recycling of CFC waste.

2.10 Mould

Moulds are forms of fungi that are found everywhere both indoors and outdoors all year round. Outdoors, moulds live in the soil, on plants and on dead and decaying matter. More than 1000 different kinds of indoor

moulds have been found in buildings. Moulds spread and reproduce by making spores, which are all small and light-weight, able to travel through air, capable of resisting dry, adverse environmental conditions, and hence capable of surviving a long time. Moulds need moisture and nutrients to grow and their growth is stimulated by warm, damp and humid conditions.

Control of exposure to mould is required under Section 25(2)(h) of the Ontario *Occupational Health and Safety Act*, which states that employers shall take every precaution reasonable in the circumstances for the protection of workers. Recommended work practices are outlined in the following documents:

- *Mould Guidelines for the Canadian Construction Industry.* Standard Construction Document CCA 82 2004. Canadian Construction Association.
- *Mould Abatement Guidelines*. Environmental Abatement Council of Ontario. Edition 3. 2015.

3 RESULTS AND DISCUSSION

3.1 Asbestos

Arcadis reviewed a report prepared by Arcadis for the Halton District School Board entitled *Survey of Asbestos-Containing Materials, Harrison Public School, 59 Rexway Drive, Georgetown, Ontario* dated February 6, 2020. Information and bulk sample analysis results obtained from this existing report was utilized by Arcadis during the course of our investigation and in the preparation of this report.

During the course of our site investigation, representative bulk samples of material were collected by Arcadis staff. The samples were forwarded to EMSL Canada Inc. (EMSL) for asbestos analyses. Results of bulk sample analysis for asbestos content are provided in Table 3.1. Table 3.1 also include sample results obtained from the existing report and include results that are outside of the designated study areas, which are provided for references purposes only. Laboratory reports are provided in Appendix B. Locations of accessible asbestos-containing materials are shown on the floor plan provided in Appendix A.

Table 3.1. Summary of Results of Analyses of Bulk Samples for Asbestos Content

Harrison Public School – June 10, 2020

Sample No.	Location	Description	Asbestos Content
1A	Door 17	Brown caulking, Exterior door frame, 1971 Era	**2% Chrysotile**
2A	Door 16	Brown/Grey caulking, Exterior door frame, 1956 Era	**2% Chrysotile**
3A	Door 9	Brown caulking, Interior door frame, 1956 Era	**2% Chrysotile**
4A	Door 4	Beige caulking, Interior door frame, 1956 Era	None detected
4B	Door 4	Beige caulking, Interior door frame, 1956 Era	None detected
4C	Door 4	Beige caulking, Interior door frame, 1956 Era	None detected
5A	Door 8	White caulking, Interior door frame, 1956 Era	None detected
5B	Door 6	White caulking, Interior door frame, 1956 Era	None detected
5C	Door 16	White caulking, Interior door frame, 1956 Era	None detected
6A	Door 17	Beige/Grey caulking, Interior door frame, 1971 Era	**1% Chrysotile**
7A	Door 10	White caulking, Interior door frame, 1971 Era	None detected
7B	Door 13	White caulking, Interior door frame, 1971 Era	None detected
7C	Door 12	Hard White caulking, Interior door frame, 1971 Era	<0.25% Chrysotile (2)
7C	Door 12	Soft White caulking, Interior door frame, 1971 Era	None detected
8A	Room 32	Paint on concrete block wall, 1971 Era	<0.25% Chrysotile (2)
8A	Room 32	Paint on concrete block wall, 1971 Era	None detected
8B	Room 32	Paint on concrete block wall, 1971 Era	<0.25% Chrysotile (2)

Sample No.	Location	Description	Asbestos Content
8C	Room 37	Paint on concrete block wall, 1971 Era	<0.25% Chrysotile [2]
9A	Room 32	Block wall mortar, 1971 Era	None detected
9B	Room 32	Block wall mortar, 1971 Era	None detected
9C	Room 37	Block wall mortar, 1971 Era	None detected
10A	Door 1	Exterior brick mortar – 1956 Era	None detected
10B	Door 9	Exterior brick mortar – 1956 Era	None detected
10C	Door 5	Exterior brick mortar – 1956 Era	None detected
1A	Room 21	Mastic under 12” vinyl floor tile, white w/ grey-green streaks	None detected (PLM) [1] None detected (TEM) [1]
1B	Room 22	Mastic under 12” vinyl floor tile, white w/ grey-green streaks	None detected [1]
1C	Room 23	Mastic under 12” vinyl floor tile, white w/ grey-green streaks	None detected [1]
2A	Room 23A	Mastic under 12” vinyl floor tile, white w/ black dots	None detected (PLM) [1] None detected (TEM) [1]
2B	Room 23A	Mastic under 12” vinyl floor tile, white w/ black dots	None detected [1]
2C	Room 23A	Mastic under 12” vinyl floor tile, white w/ black dots	None detected [1]
3A	Room 26	Mastic under 12” vinyl floor tile, pink-beige w/ beige specks	**0.56% Chrysotile [1]**
4A	Room 23	Vinyl baseboard	None detected (PLM) [1] None detected (TEM) [1]
4B	Room 23A	Vinyl baseboard	None detected [1]
4C	Room 26	Vinyl baseboard	None detected [1]
5A	Room 23	Vinyl baseboard mastic	None detected (PLM) [1] None detected (TEM) [1]
5B	Room 23A	Vinyl baseboard mastic	None detected [1]
5C	Room 26	Vinyl baseboard mastic	None detected [1]
6A	Room 21	Concrete block mortar, 1956	None detected [1]
6B	Room 22	Concrete block mortar, 1956	None detected [1]
6C	Room 23	Concrete block mortar, 1956	None detected [1]
7A	Room 26	Drywall joint compound	None detected [1]
7B	Room 26	Drywall joint compound	None detected [1]
7C	Room 26	Drywall joint compound	None detected [1]
8	Room 23A	Paint on concrete block	None detected [1]
9A	Exterior	Brick mortar	None detected [1]
9B	Exterior	Brick mortar	None detected [1]

Sample No.	Location	Description	Asbestos Content
9C	Exterior	Brick mortar	None detected (1)
1A	Room 13	2'x4' Ceiling tile – pinhole random fissure	None detected (1)
1B	Room 15	2'x4' Ceiling tile – pinhole random fissure	None detected (1)
1C	Corridor 36A	2'x4' Ceiling tile – pinhole random fissure	None detected (1)
2A	Room 13	Mastic under 12" vinyl floor tile (black)	None detected (1)
2B	Room 13	Mastic under 12" vinyl floor tile (black)	None detected (1)
2C	Room 13	Mastic under 12" vinyl floor tile (black)	None detected (1)
3A	Room 15	Mastic under 12" vinyl floor tile (black)	None detected (1)
3B	Room 15	Mastic under 12" vinyl floor tile (black)	None detected (1)
3C	Room 15	Mastic under 12" vinyl floor tile (black)	None detected (1)
4A	Room 13	Vinyl baseboard (black)	None detected (PLM) (1) None detected (TEM) (1)
4B	Room 15	Vinyl baseboard (black)	None detected (1)
4C	Room 13	Vinyl baseboard (black)	None detected (1)
5A	Room 13	Mastic on vinyl baseboard	None detected (1)
5B	Room 15	Mastic on vinyl baseboard	None detected (1)
5C	Room 13	Mastic on vinyl baseboard	None detected (1)
6A	Room 13	Interior brick mortar	None detected (1)
6B	Room 13	Interior brick mortar	None detected (1)
6C	Room 13	Interior brick mortar	None detected (1)
7A	Room 15	Thermal insulation (antisweat) – brown paper	None detected (1)
7B	Corridor 36A	Thermal insulation (antisweat) – brown paper	None detected (1)
7C	Room 15	Thermal insulation (antisweat) – brown paper	None detected (1)
8A	Room 15	Thermal insulation (antisweat) – black paper	**15% Chrysotile (1,3)**
9	Room 13	Cement board	**15% Chrysotile (1)**
1A	Room 19	2'x4' Ceiling tile – Pinhole with fissure on 2'	None detected (1)
1B	Room 19	2'x4' Ceiling tile – Pinhole with fissure on 2'	None detected (1)
1C	Room 19	2'x4' Ceiling tile – Pinhole with fissure on 2'	None detected (1)
2A	Room 27	Door caulking – white, soft	None detected (1)
2B	Room 28	Door caulking – white, soft	None detected (1)
2C	Room 28	Door caulking – white, soft	None detected (1)
3A	Ext. wall of Room 32	Control joint caulking – grey, brown	**1% Chrysotile (1,3)**
4A	Room 27	Window caulking - beige	None detected (1)

Sample No.	Location	Description	Asbestos Content
4B	Room 28	Window caulking - beige	None detected (1)
4C	Room 28	Window caulking - beige	None detected (1)
10A	Room 27	Concrete block mortar - grey	None detected (1)
10B	Room 29	Concrete block mortar - grey	None detected (1)
10C	Room 19	Concrete block mortar - grey	None detected (1)
11A	Room 27	Rapidex ceiling panel	None detected (1)
11B	Room 28	Rapidex ceiling panel	None detected (1)
11C	Room 28	Rapidex ceiling panel	None detected (1)
12A	Room 27	Concrete block filler paint, 1956	None detected (1)
12B	Room 28	Concrete block filler paint, 1956	None detected (1)
12C	Room 28	Concrete block filler paint, 1956	None detected (1)
13A	Room 18	Concrete block filler paint, 1956	None detected (1)
13B	Room 19	Concrete block filler paint, 1956	None detected (1)
13C	Room 19	Concrete block filler paint, 1956	None detected (1)
14A	Ext. wall Room 32	Brick mortar, 1971	None detected (1)
14B	Ext. wall Room 32	Brick mortar, 1971	None detected (1)
14C	Ext. wall Room 32	Brick mortar, 1971	None detected (1)
1A-JC-2	Room E2	Drywall joint compound	None detected (1)
1B-JC-4	Room E4	Drywall joint compound	None detected (1)
1C-JC-6	Room E6	Drywall joint compound	None detected (1)
1D-JC-36	Room 36	Drywall joint compound	None detected (1)
1E-JC-37	Room 37	Drywall joint compound (1956)	**1.1% Chrysotile (1)**
2A-VFT-2	Room E2	12” vinyl floor tile, beige w/ beige specks	None detected (PLM) (1) None detected (TEM) (1)
2B-VFT-4	Room E4	12” vinyl floor tile, beige w/ beige specks	None detected (1)
2C-VFT-3	Room 3	12” vinyl floor tile, beige w/ beige specks	None detected (1)
2A-MS-2	Room E2	Mastic below vinyl floor tile, beige w/ beige specks	None detected (1)
2B-MS-4	Room E4	Mastic below vinyl floor tile, beige w/ beige specks	**1.8% Chrysotile (1)**
6A-CK-2	Room E2	Wall panel frame caulking, exterior, white	None detected (PLM) (1) None detected (TEM) (1)
6B-CK-4	Room E4	Wall panel frame caulking, exterior, white	None detected (1)
6C-CK-6	Room E6	Wall panel frame caulking, exterior, white	None detected (1)

Sample No.	Location	Description	Asbestos Content
7A-SCT-2	Room E2	2'x4' suspended ceiling tile, random short fissures	None detected [1]
7B-SCT-4	Room E4	2'x4' suspended ceiling tile, random short fissures	None detected [1]
7C-SCT-6	Room E6	2'x4' suspended ceiling tile, random short fissures	None detected [1]
8A-CT-2	Room E2	12" ceiling tile, pinholes, cellulose	None detected [1]
9A-VFT-6	Room E6	12" vinyl floor tile, tan w/ red-brown specks	**1.8% Chrysotile [1,3]**
9A-MS-6	Room E6	Mastic below vinyl floor tile, tan w/ red-brown specks	**1.1% Chrysotile [1,3]**
10A-VFT-8	Room 8	12" vinyl floor tile, white w/ black small streaks	**2.7% Chrysotile [1]**
11A-PS-8	Room 8	Pipe straight insulation, antisweat, domestic water	None detected [1]
12A-VFT-7	Room 7	12" vinyl floor tile, grey w/grey specks	None detected (PLM) [1] None detected (TEM) [1]
12B-VFT-7	Room 7	12" vinyl floor tile, grey w/grey specks	None detected [1]
12C-VFT-7	Room 7	12" vinyl floor tile, grey w/grey specks	None detected [1]
13A-PS-36	Room 36	Pipe straight insulation, antisweat w/ black paper	None detected [1]
13B-PS-36	Room 36	Pipe straight insulation, antisweat w/ black paper	None detected [1]
14A-VFT-25C	Room 25C	12" vinyl floor tile, pink-beige w/ beige specks	None detected (PLM) [1] None detected (TEM) [1]
14B-VFT-26	Room 26	12" vinyl floor tile, pink-beige w/ beige specks	None detected [1]
14C-VFT-25C	Room 25C	12" vinyl floor tile, pink-beige w/ beige specks	None detected [1]
15A-SCT-17	Room 17	2'x4' suspended ceiling tile, fissures in 2'	None detected [1]
15B-SCT-37	Room 37	2'x4' suspended ceiling tile, fissures in 2'	None detected [1]
15C-SCT-37	Room 37	2'x4' suspended ceiling tile, fissures in 2'	None detected [1]
16A-PS-17	Room 17	Pipe straight insulation, antisweat, rain drain	None detected [1]
16B-PS-11	Room 11	Pipe straight insulation, antisweat, rain drain	None detected [1]
17A-VFT-23	Room 23	12" vinyl floor tile, white w/ grey-green streaks	**0.53% Chrysotile (TEM) [1]**
18A-VFT-23A	Room 23A	12" vinyl floor tile, white w/ black dots	None detected (PLM) [1] None detected (TEM) [1]
18B-VFT-23A	Room 23A	12" vinyl floor tile, white w/ black dots	None detected [1]
18C-VFT-23A	Room 23A	12" vinyl floor tile, white w/ black dots	None detected [1]
19A-VFT-12	Room 12	12" vinyl floor tile, tan w/ brown streaks	None detected (PLM) [1] None detected (TEM) [1]
19B-VFT-12	Room 12	12" vinyl floor tile, tan w/ brown streaks	None detected [1]
19C-VFT-12	Room 12	12" vinyl floor tile, tan w/ brown streaks	None detected [1]

Sample No.	Location	Description	Asbestos Content
20A-VFT-15	Room 15	12” vinyl floor tile, white w/ black specks	None detected (PLM) (1) None detected (TEM) (1)
20B-VFT-15	Room 15	12” vinyl floor tile, white w/ black specks	None detected (1)
20C-VFT-15	Room 15	12” vinyl floor tile, white w/ black specks	None detected (1)
21A-PL-35	Room 35	Plaster textured, 1971	**2.4% Chrysotile (1)**
22A-PL-35	Room 35	Plaster, smooth, 1971	None detected (1)
22B-PL-35	Room 35	Plaster, smooth, 1971	None detected (1)
22C-PL-35	Room 35	Plaster, smooth, 1971	None detected (1)
23A-VFT-32	Room 32	12” vinyl floor tile, green solid	0.26% Chrysotile (PLM) (1,2) **0.70% Chrysotile (TEM) (1)**
23B-VFT-32	Room 32	12” vinyl floor tile, green solid	0.30% Chrysotile (1,2)
23C-VFT-32	Room 32	12” vinyl floor tile, green solid	0.31% Chrysotile (1,2)
1	Area 35A	Rain water leader pipe straight insulation	None detected (TEM) (1)
2	Area 15	Rain water leader pipe straight insulation	None detected (1)
3	Area 10	Rain water leader hub insulation	**30% Chrysotile (1)**
4	Area 29	Hot water heating pipe straight insulation	**17% Chrysotile (1)**
5	Area 29	Hot water heating pipe fitting insulation	**33% Chrysotile (1)**
6	Area 29	Domestic water pipe fitting insulation	**6.7% Chrysotile (1)**
7	Area 29	Domestic water pipe straight insulation	None detected (1)

NOTES:

(1) Sample results derived from a report prepared Arcadis for the Halton District School Board entitled *Survey of Asbestos-Containing Materials, Harrison Public School, 59 Rexway Drive, Georgetown, Ontario* dated February 6, 2020.

(2) “Asbestos-containing material” is defined as material that contains 0.5% or more asbestos by dry weight.

(3) Material collected in the area have since been removed and are provided here for references purposes only.

Bulk samples were analyzed by Polarized Light Microscopy (PLM) analysis, except where “TEM” is noted, in which case Transmission Electron Microscopy analysis was also performed.

< = less than.

Chrysotile = Chrysotile asbestos.

Determination of the locations of asbestos-containing material was made based on the review of existing information, results of bulk sample analysis, visual observations and physical characteristics of the applications as well as our knowledge of the uses of asbestos in building materials.

Based on visual observations and results of laboratory analyses of samples collected by Arcadis Canada Inc., the following asbestos-containing materials were found to be present in the designated study areas:

- caulking on interior frames of Exit Doors 1, 9 and 17;
- caulking on exterior frames of Exit Doors 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16 and 17;
- joint compound on drywall walls above Exit Doors 1, 4, 9 and 16;
- textured plaster on walls above Exit Doors 10 and 13 in Corridor 35;
- vinyl floor tiles (12" x 12") in Room 1 with Exit Doors 4 and 5, and Room 32 with Exit Doors 11 and 12; and
- vinyl floor tile mastic in Room 1 with Exit Doors 4 and 5.

During the course of our site investigation, the interior of doors was accessed in several locations throughout the designated study areas where doors are being replaced. Materials suspected of containing asbestos was not observed in all doors accessed.

Asbestos-containing thermal insulation applied to pipe fittings is a white-coloured cementitious material.

Glass fiber insulation is readily visually distinguishable (typically yellow in colour) from asbestos-containing insulation materials and was, therefore, not tested for asbestos content.

Vinyl floor tiles, floor tile mastics and caulking are non-friable materials. The removal, alteration and disturbance of these non-friable asbestos-containing materials can be performed as a Type 1 operation as specified in O. Reg. 278/05 if the material is wetted and the work is done only using non-powered, hand-held tools (see Table C-1 in Appendix C). If the removal, alteration and/or disturbance work is done using power tools that are attached to dust-collecting devices equipped with HEPA filters, then the work is classified as Type 2. If the power tools do not have HEPA filtered dust collecting devices, then the work is Type 3.

The removal, alteration or disturbance of less than one square metre of drywall in which asbestos-containing joint filling compounds have been used is classified as a Type 1 operation. The removal, alteration and/or disturbance of one square metre or more of drywall with asbestos-containing joint compounds is a Type 2 operation.

Plaster is a non- or semi-friable material which can become friable when disturbed. According to the Ministry of Labour *"A Guide to the Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations"*, dated November 2007, wetting does not adequately control the spread of dust and fibres during the breaking, cutting, drilling, abrading, grinding, sanding or vibrating of asbestos containing plaster (as well as stucco and other hard finishes) by means of non-powered hand-held tools. As such, Type 1 procedures cannot be used for work on these materials. The removal, alteration and/or disturbance should therefore be classified as a Type 2 or Type 3 operation depending on the tools used, and the amount of material to be removed.

Asbestos may also be present in materials which were not sampled during the course of the asbestos survey carried out by Arcadis, including, but not limited to, areas outside the designated study areas, roofing materials, mastics or cementitious levelling compound under vinyl flooring, grout, gaskets in piping, internal

components of boilers, components of electrical equipment (e.g. electric wiring insulation, non-metallic sheathed cable, electrical panel partitions, arc chutes, high-grade electrical paper, etc.), asphaltic pavement, etc., and in locations that are presently inaccessible (e.g., in pipe chases, behind walls, above suspended gypsum board or plaster ceilings, and below carpets). Asbestos may also be present in the form of vermiculite insulation in cavities in concrete or cement block walls (used as in-fill insulation). Confirmatory testing of any such materials could be undertaken as the need arises (i.e., at the time of renovations, modifications or demolition) or the materials can be assumed to contain asbestos based on findings in adjacent areas.

If any materials which may contain asbestos and which were not tested during the course of the designated substances and hazardous materials survey are discovered during any construction activities, the work shall not proceed until such time as the required notifications have been made and an appropriate course of action is determined.

3.2 Lead

Arcadis reviewed a report prepared by Arcadis entitled *Pre-Renovation Designated Substances and Hazardous Materials Survey, Harrison Public School, 59 Rexway Drive, Georgetown, Ontario* dated April 12, 2019. Information and bulk sample analysis results obtained from this existing report was utilized by Arcadis during the course of our investigation and in the preparation of this report.

During the course of our site investigation, additional bulk samples of paint observed in the study areas were collected by Arcadis staff. The samples were forwarded to Bureau Veritas for lead analyses. Results of bulk sample analysis for lead content are provided in Table 3.2. The laboratory report is provided in Appendix B.

Table 3.2. Summary of Results of Analyses of Bulk Samples for Lead Content

Harrison Public School – June 10, 2020

Sample No.	Sample Location	Sample Description	Lead Content
P1	Door 13	Brown paint on door	<10 mg/kg
P3	Room 28	Paint from concrete block – beige coloured	<90 mg/kg (1)

NOTE:

(1) Sample results derived from a report prepared by Arcadis entitled *Pre-Renovation Designated Substances and Hazardous Materials Survey, Harrison Public School, 59 Rexway Drive, Georgetown, Ontario* dated April 12, 2019.

< = less than.

mg/Kg = milligrams lead per kilogram paint.

1 mg/Kg - 1 part per million (ppm).

Based on review of an existing report and additional samples collected, lead is not present in the paint observed in the designated study areas. Lead was not detected (i.e., less than the laboratory limits of detections of 10 mg/kg and 90 mg/kg) in the paint samples.

Lead may also be present in lead pipe, mortar, in the solder on the seals of bell joints of any cast iron drainpipe and in the solder on the sweated-on joints between copper pipe and fittings.

The Ministry of Labour *Guideline – Lead on Construction Projects*, dated April 2011, provides guidance in the measures and procedures that should be followed when handling lead containing materials during construction projects. In the guideline, lead-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of lead, as shown in Appendix C, Table C-2. Any operation that may expose a worker to lead that is not a Type 1, Type 2, or Type 3b operation, is classified as a Type 3a operation.

In addition, the *EACO Lead Abatement Guidelines*, *2014 — Edition 1,* Environmental Abatement Council of Ontario, also provides guidance and recommended work practices.

3.3 Mercury

During the course of our site investigation, fluorescent lights were observed in the designated study area. Mercury should be assumed to be present as a gas in all fluorescent light tubes and in all paint applications, albeit at low levels. The fluorescent light tubes should be recycled for mercury, if the lights are removed.

Proper procedures for removing and handling mercury-containing fluorescent light tubes typically involve:

- ensuring that electrical power to light fixtures has been disconnected and locked out;
- taking all necessary precautions to ensure that fluorescent lamp tubes are removed in a manner that prevents breakage; and
- transporting fluorescent lamp tubes to a licensed processing location for separation and recovery of mercury.

The measures and procedures outlined in the MOL *Guideline, Lead on Construction Projects* for control of potential exposure to lead in paint during construction activities will also serve to control potential exposure to any mercury in paint.

3.4 Silica

Materials observed in the designated study areas which should be considered to contain silica included gypsum board, drywall joint compound, plaster, concrete, concrete mortar, cement block walls, and vinyl floor tiles.

Silica can also be assumed to be present in any gravel ballast on roofs and will also be found in asphalt roofing materials if rock or stone are present in the asphalt.

The Ministry of Labour *Guideline, Silica on Construction Projects*, April 2011, provides guidance in controlling exposure to silica dust during construction activities. In the guideline, silica-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of silica, as shown in Appendix C, Table C-3.

Additional precautionary measures should also be implemented for certain types of materials (e.g., plaster and texture coat materials, including non-asbestos applications, concrete block, etc.). For minor disturbances such as drilling, a HEPA-filtered attachment should be used. For removal of more than a minor amount of material, enclosures should be constructed for dust control and separation of the work area from adjacent areas.

3.5 Vinyl Chloride

As mentioned in Section 2.5 above, vinyl chloride would only be a potential exposure concern in the event of combustion of PVC products.

3.6 Acrylonitrile

As mentioned in Section 2.6 above, acrylonitrile would only be a potential exposure concern in the event of combustion of ABS products.

3.7 Other Designated Substances

No other designated substances (benzene, isocyanates, arsenic, ethylene oxide and coke oven emissions) were observed to be present in the designated study areas, and none would be expected to be encountered in any building materials in a form that would represent an exposure concern. Arsenic may be present at low levels in paint applications. The measures and procedures outlined in the MOL *Guideline, Lead on Construction Projects* for control of potential exposure to lead in paint during construction activities will also serve to control potential exposure to any arsenic (or mercury) in paint.

3.8 Polychlorinated Biphenyls (PCBs)

Fluorescent lights were observed in the designated study areas during the course of our site investigations. Light ballasts, such as those associated with the type of fluorescent lights (T8s) observed in the designated study areas, are usually an electronic-type which do not contain PCBs, however, this would be confirmed by an electrician at the time of dismantling of the lights.

3.9 Ozone-Depleting Substances (ODS) and Other Halocarbons

Equipment potentially containing ODS was not identified during the course of the site investigation.

3.10 Mould

Readily evident mould was not observed during the course of the site investigation. The inspection of mould was limited to visual observations of readily-accessible surfaces and did not include intrusive

inspections of wall cavities. During renovations or interior demolition work, any mould-impacted materials uncovered/discovered should be remediated following the measures and procedures outlined in the *Canadian Construction Association Standard Construction Document CCA-82 2004 - Mould Guidelines for the Canadian Construction Industry*.

4 USE AND LIMITATIONS OF THIS PRE-RENOVATION DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY REPORT

This report, prepared for the Halton District School Board does not provide certification or warranty, expressed or implied, that the investigation conducted by Arcadis Canada Inc. identified all designated substances (as defined in the Ontario *Occupational Health and Safety Act*) in the designated study area at the subject facility. The work undertaken by Arcadis Canada Inc. was directed to provide information on the presence of designated substances in building construction materials based on review of existing information, visual investigation of readily accessible areas in the designated study areas of the building and on the results of laboratory analysis of a limited number of bulk samples of material for asbestos content and laboratory analysis of a limited number of paint samples for lead content. The survey did not include for identification of asbestos in process materials, equipment (including electrical equipment and wiring), furniture (e.g., chairs, table tops, etc.), nor material outside of the building (e.g., asphaltic pavement).

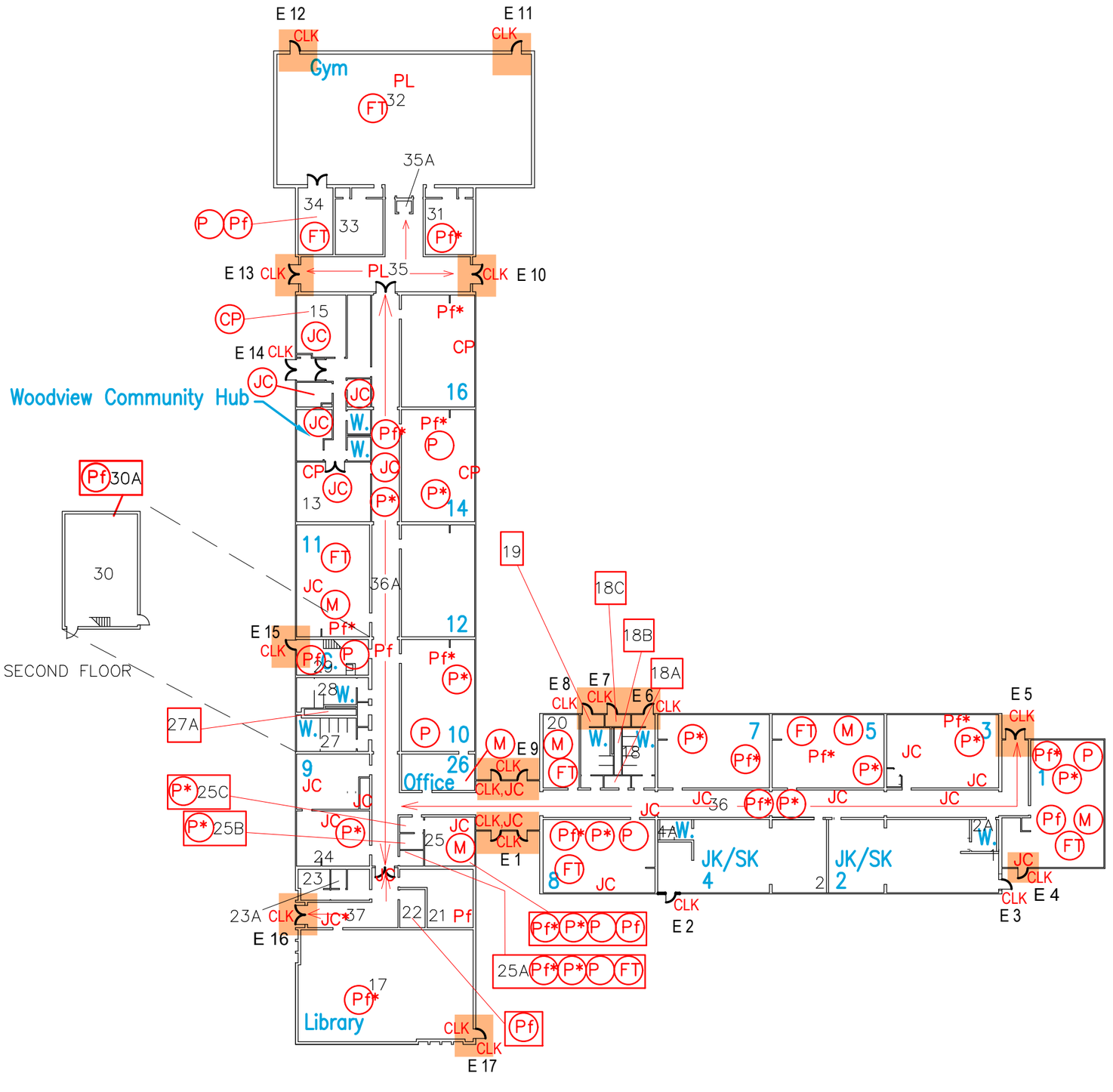
The material in this report reflects Arcadis Canada Inc.'s best judgment in light of the information available at the time of the investigation, which was performed on June 10, 2020.

This report is not intended to be used as a scope of work or technical specification for remediation of designated substances or hazardous materials.

This report was prepared by Arcadis Canada Inc. for the Halton District School Board. Any use which any other party makes of the report, or reliance on, or decisions to be based on it, is the responsibility of such parties.

APPENDIX A

Floor Plans



LEGEND:

16	FUNCTIONAL SPACE
◯	THROUGHOUT FUNCTIONAL SPACE
*	ABOVE CEILING ASSEMBLY
P	ASBESTOS ON STRAIGHT SECTIONS OF PIPING (FRIABLE)
Pf	ASBESTOS ON PIPE FITTINGS (FRIABLE)
JC	ASBESTOS DRYWALL JOINT COMPOUND (NON-FRIABLE)
CP	ASBESTOS CEMENT PRODUCT (NON-FRIABLE)
M	ASBESTOS FLOOR TILE MASTIC (NON-FRIABLE)
FT	ASBESTOS VINYL FLOOR TILE (NON-FRIABLE)
PL	ASBESTOS PLASTER (NON-FRIABLE)
CLK	ASBESTOS DOOR FRAME CAULKING (NON-FRIABLE)
▭	STUDY AREA

Scale

5 0 1 2 3 4 5 10 15 20
METRES

5 0 3 10 20 30 40 50
FEET

ARCADIS

HALTON DISTRICT SCHOOL BOARD

PRE-RENOVATION DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY

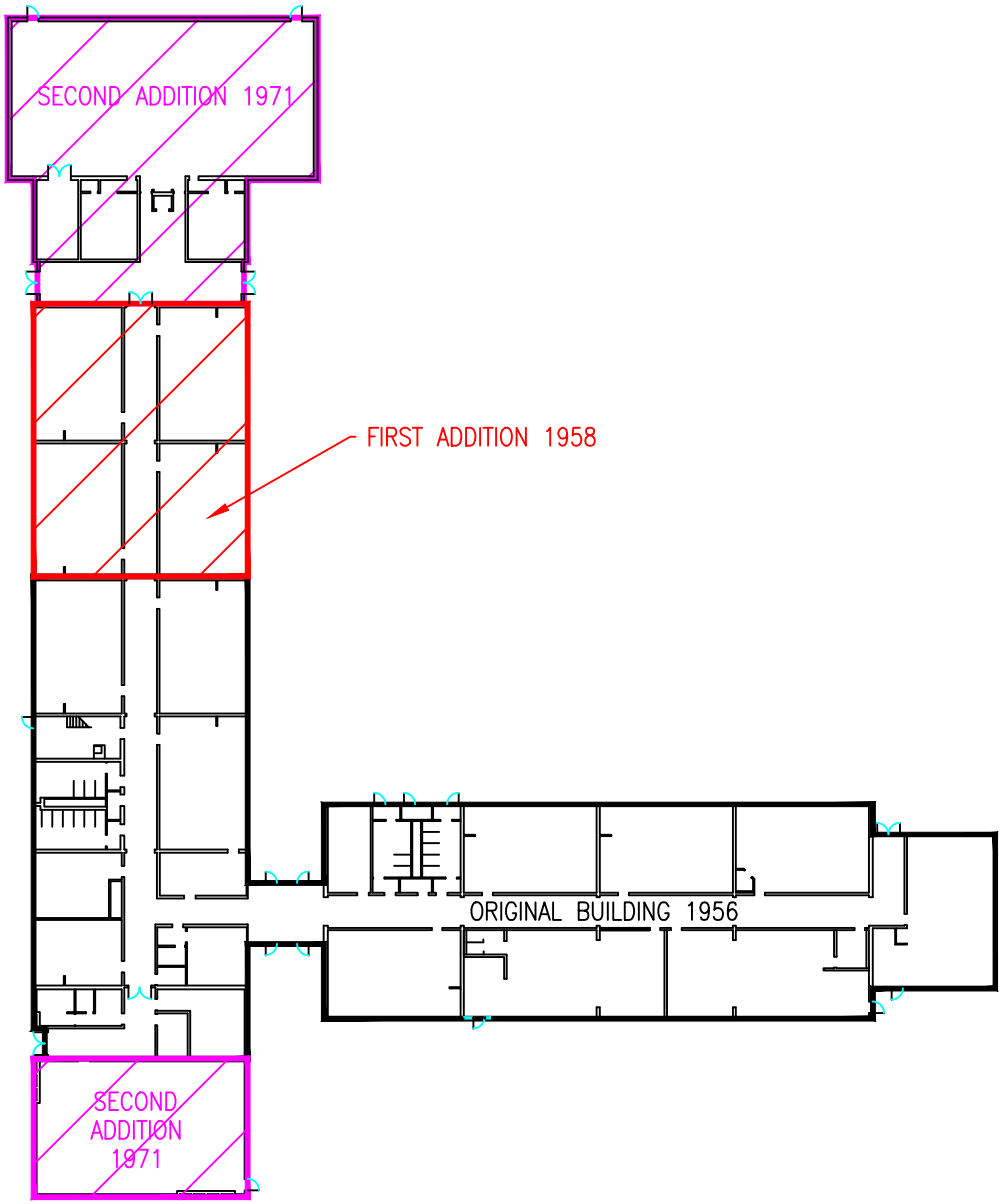
LOCATIONS OF ASBESTOS-CONTAINING MATERIALS AND STUDY AREAS

HARRISON PUBLIC SCHOOL
59 REXWAY DRIVE, GEORGETOWN, ON

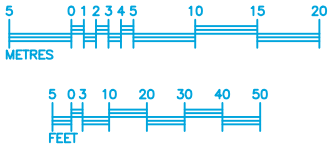
FIRST AND SECOND FLOOR PLAN

Drawn By: A.N.	Approved By: J.D.	Project No: 30049846	
Date: JULY 2020	Scale: AS SHOWN	Drawing No: 30049846-1	

C:\Users\ymb26440\BIM 360\Arcadis\ANA-Halton District School Board\Project Files\Harrison P.S\2020\30000861.00002\01-DWG\30000861 Harrison P.S 2019 Updated ACM Drawing.dwg LAYOUT: LAYOUT2-LAYOUT1 SAVED: 1/17/2020 11:51 AM
PLOTTED: 1/17/2020 11:54 AM BY: Y M, BABU



Scale



TRUE NORTH

PROJECT NORTH

SCHOOL

Harrison Public School

LOCATION
59 REXWAY DRIVE
GEORGETOWN, ONTARIO

MAP SPONSORED	30 JANUARY 2014
PREVIOUS UPDATE	21 JAN 2013
DRAWN	JK-5
SCALE	1"=50'-0"
DESIGN	RDZ
PROJECT LAST SPONSORED	20 OCT 2011
YEAR BUILT	1956
AREA SQ. FT.	29468 (2737m²)
CAD FILE NAME	HARPS

SHEET TITLE

FIRST FLOOR PLAN

PROJECT NAME

AREA

DRAWING B | NUMBER 2

APPENDIX B

Laboratory Reports

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552006271
Customer ID: 55DCSL97
Customer PO: 30049846
Project ID:

Attn: Shubham Shringi
ARCADIS Canada Inc.
121 Granton Drive
Unit 12
Richmond Hill, ON L4B 3N4

Proj: Harrison PS, 30049846

Phone: (905) 882-5984
Fax: (905) 882-8962
Collected:
Received: 6/10/2020
Analyzed: 6/27/2020

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 1A **Lab Sample ID:** 552006271-0001
Sample Description: Brown Caulking, Exterior Door Frame - 17, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	98.0%	2% Chrysotile	

Client Sample ID: 1B **Lab Sample ID:** 552006271-0002
Sample Description: Brown Caulking, Exterior Door Frame - 13, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020				Positive Stop (Not Analyzed)	

Client Sample ID: 1C **Lab Sample ID:** 552006271-0003
Sample Description: Brown Caulking, Exterior Door Frame - 10, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020				Positive Stop (Not Analyzed)	

Client Sample ID: 2A **Lab Sample ID:** 552006271-0004
Sample Description: Brown/Grey Caulking, Exterior Door Frame - 16, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	98.0%	2% Chrysotile	

Client Sample ID: 2B **Lab Sample ID:** 552006271-0005
Sample Description: Brown/Grey Caulking, Exterior Door Frame - 1, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020				Positive Stop (Not Analyzed)	

Client Sample ID: 2C **Lab Sample ID:** 552006271-0006
Sample Description: Brown/Grey Caulking, Exterior Door Frame - Door 9, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020				Positive Stop (Not Analyzed)	

Client Sample ID: 3A **Lab Sample ID:** 552006271-0007
Sample Description: Brown Caulking, Interior Door Frame - Door 9, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Brown	0.0%	98.0%	2% Chrysotile	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
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http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552006271
Customer ID: 55DCSL97
Customer PO: 30049846
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 3B **Lab Sample ID:** **552006271-0008**
Sample Description: Brown Caulking, Interior Door Frame - Door 5, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020				Positive Stop (Not Analyzed)	

Client Sample ID: 3C **Lab Sample ID:** **552006271-0009**
Sample Description: Brown Caulking, Interior Door Frame - Door 9, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020				Positive Stop (Not Analyzed)	

Client Sample ID: 4A **Lab Sample ID:** **552006271-0010**
Sample Description: Beige Caulking, Interior Door Frame - Door 4, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Tan	0.0%	100.0%	None Detected	

Client Sample ID: 4B **Lab Sample ID:** **552006271-0011**
Sample Description: Beige Caulking, Interior Door Frame - Door 4, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Tan	0.0%	100.0%	None Detected	

Client Sample ID: 4C **Lab Sample ID:** **552006271-0012**
Sample Description: Beige Caulking, Interior Door Frame - Door 4, 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Tan	0.0%	100.0%	None Detected	

Client Sample ID: 5A **Lab Sample ID:** **552006271-0013**
Sample Description: White Caulking, Interior Door Frame, Door 8 - 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 5B **Lab Sample ID:** **552006271-0014**
Sample Description: White Caulking, Interior Door Frame, Door 6 - 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 5C **Lab Sample ID:** **552006271-0015**
Sample Description: White Caulking, Interior Door Frame, Door 16 - 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White	0.0%	100.0%	**<1% Chrysotile**	

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http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552006271
Customer ID: 55DCSL97
Customer PO: 30049846
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 6A **Lab Sample ID:** **552006271-0016**

Sample Description: Beige/Grey Caulking, Interior Door Frame, 17, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Beige	0.0%	99.0%	**1% Chrysotile**	

Client Sample ID: 6B **Lab Sample ID:** **552006271-0017**

Sample Description: Beige/Grey Caulking, Interior Door Frame, 17, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020			Positive Stop (Not Analyzed)		

Client Sample ID: 6C **Lab Sample ID:** **552006271-0018**

Sample Description: Beige/Grey Caulking, Interior Door Frame, 17, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020			Positive Stop (Not Analyzed)		

Client Sample ID: 7A **Lab Sample ID:** **552006271-0019**

Sample Description: White Caulking, Interior Door Frame, 10 - 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7B **Lab Sample ID:** **552006271-0020**

Sample Description: White Caulking, Interior Door Frame, 13 - 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7C **Lab Sample ID:** **552006271-0021**

Sample Description: White Caulking, Interior Door Frame, 12 - 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White	0.0%	100.0%	**<1% Chrysotile**	Layers combined prior to analysis at client request
PLM Grav. Reduction	6/27/2020	White	0.0%	100%	**<0.25% Chrysotile**	Layers combined prior to analysis at client request

Client Sample ID: 8A-Block Fill/Paint **Lab Sample ID:** **552006271-0022**

Sample Description: Concrete Block Wall, 12, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Beige	0.0%	100.0%	**<1% Chrysotile**	
400 PLM Pt Ct	6/13/2020	Beige	0.0%	100.0%	**<0.25% Chrysotile**	

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http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552006271
Customer ID: 55DCSL97
Customer PO: 30049846
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 8A-Concrete ***Lab Sample ID:*** **552006271-0022A**

Sample Description: Concrete Block Wall, 12, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 8B ***Lab Sample ID:*** **552006271-0023**

Sample Description: Paint on Concrete Block Wall, 11, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Beige	0.0%	100.0%	**<1% Chrysotile**	
400 PLM Pt Ct	6/13/2020	Beige	0.00%	99.75%	**0.25% Chrysotile**	

Client Sample ID: 8C ***Lab Sample ID:*** **552006271-0024**

Sample Description: Paint on Concrete Block Wall, 16, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	White/Beige	0.0%	100.0%	**<1% Chrysotile**	
400 PLM Pt Ct	6/13/2020	White/Beige	0.0%	100.0%	**<0.25% Chrysotile**	

Client Sample ID: 9A ***Lab Sample ID:*** **552006271-0025**

Sample Description: Block Wall Mortar, 12, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 9B ***Lab Sample ID:*** **552006271-0026**

Sample Description: Block Wall Mortar, 12, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 9C ***Lab Sample ID:*** **552006271-0027**

Sample Description: Block Wall Mortar, 12, 1971 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 10A ***Lab Sample ID:*** **552006271-0028**

Sample Description: Exterior Brick Mortar, Door 1 - 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 10B ***Lab Sample ID:*** **552006271-0029**

Sample Description: Exterior Brick Mortar, Door 9 - 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

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http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552006271
Customer ID: 55DCSL97
Customer PO: 30049846
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 10C ***Lab Sample ID:*** **552006271-0030**

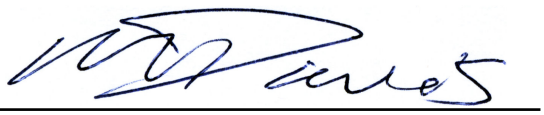
Sample Description: Exterior Brick Mortar, Door 5 - 1956 Era

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/13/2020	Gray	0.0%	100.0%	None Detected	

Analyst(s):

Caroline Allen	PLM (6) 400 PLM Pt Ct (1) PLM Grav. Reduction (1)
Kira Ramphal	PLM (17) 400 PLM Pt Ct (2)

Reviewed and approved by:



Matthew Davis or other approved signatory
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Report amended: 06/27/202013:20:12 Replaces initial report from: 06/13/202016:47:41 Reason Code: Client-Additional Analysis

Your Project #: 30049846
Site Location: HARRISON PS
Your C.O.C. #: 1488737

Attention: Shubham Shringi

ARCADIS Canada Inc
121 Granton Dr
Unit 12
Richmond Hill, ON
CANADA L4B 3N4

Report Date: 2020/06/11
Report #: R6206609
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0E2646
Received: 2020/06/10, 15:16

Sample Matrix: Paint
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Metals in Paint	1	2020/06/11	2020/06/11	CAM SOP-00408	EPA 6010D m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Marijane Cruz, Senior Project Manager
Email: Marijane.Cruz@bvlabs.com
Phone# (905)817-5756

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C0E2646
Report Date: 2020/06/11

ARCADIS Canada Inc
Client Project #: 30049846
Site Location: HARRISON PS

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

BV Labs ID		MVJ878		
Sampling Date				
COC Number		1488737		
	UNITS	BROWN PAINT ON DOOR FRAME DOOR 13	RDL	QC Batch
Metals				
Lead (Pb)	mg/kg	<10	10	6781149

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Sample MVJ878 [BROWN PAINT ON DOOR FRAME DOOR 13] : Metals: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C0E2646
Report Date: 2020/06/11

QUALITY ASSURANCE REPORT

ARCADIS Canada Inc
Client Project #: 30049846
Site Location: HARRISON PS

			Matrix Spike		Method Blank		RPD		QC Standard	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**	**% Recovery**	**QC Limits**
6781149	Lead (Pb)	2020/06/11	NC	75 - 125	<1.0	mg/kg	34	35	101	75 - 125

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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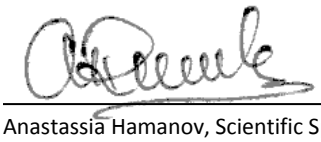
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C0E2646
Report Date: 2020/06/11

ARCADIS Canada Inc
Client Project #: 30049846
Site Location: HARRISON PS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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APPENDIX C

Summary of Asbestos, Lead and Silica Work Classifications

TABLE C-1
SUMMARY OF CLASSIFICATION OF TYPE 1, 2 AND 3 OPERATIONS (Ont. Reg. 278/05)

TYPE 1 OPERATIONS

- removing less than 7.5 m^2 asbestos-containing ceiling tiles;
- removing non-friable asbestos-containing material other than ceiling tiles, if the material is removed without being broken, cut, drilled, abraded, ground, sanded or vibrated;
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the material is wetted and the work is done only using non-powered, hand-held tools; and
- removing less than 1 m^2 of drywall in which asbestos-containing joint compounds have been used.

TYPE 2 OPERATIONS

- removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely to be lying on the surface of the false ceiling;
- removal of one square metre or less of friable asbestos-containing material;
- enclosing friable asbestos-containing material;
- applying tape or a sealant or other covering to asbestos-containing pipe or boiler insulation;
- removing 7.5 m^2 or more asbestos-containing ceiling tiles (if removed without being broken, cut, drilled, abraded, ground, sanded or vibrated);
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the material is not wetted and the work is done only using non-powered, hand-held tools;
- removal of one square metre or more of drywall in which asbestos-containing joint compounds have been used;
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the work is done using power tools that are attached to dust-collecting devices equipped with HEPA filters;
- cleaning or removing filters used in air-handling equipment in a building that has asbestos-containing sprayed fireproofing.

TABLE C-1 (Continued)
SUMMARY OF CLASSIFICATION OF TYPE 1, 2 AND 3 OPERATIONS (Ont. Reg. 278/05)

TYPE 3 OPERATIONS

- removal of more than one square metre of friable asbestos-containing material;
- spray application of a sealant to friable asbestos-containing material;
- cleaning or removing air-handling equipment, including rigid ducting but not including filters, in a building that has sprayed asbestos-containing fireproofing;
- repairing or demolishing a kiln, metallurgical furnace or similar structure that is made in part of asbestos-containing refractory materials;
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing materials, if the work is done using power tools that are not attached to dust-collecting devices equipped with HEPA filters.

TABLE C-2
SUMMARY OF CLASSIFICATION OF LEAD-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE – LEAD ON CONSTRUCTION PROJECTS, APRIL 2011

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

Note: The classification of Type 1, 2 and 3 operations is based on presumed airborne concentrations of lead, as shown above.

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, babbit or similar material;
- removal of lead-containing coatings or materials using non-powered hand tools, other than manual scraping or sanding;
- soldering.

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.

TABLE C-2 (Continued)
SUMMARY OF CLASSIFICATION OF LEAD-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE – LEAD ON CONSTRUCTION PROJECTS, APRIL 2011

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.

TABLE C-3

SUMMARY OF CLASSIFICATION OF SILICA-CONTAINING CONSTRUCTION TASKS

MOL GUIDELINE, SILICA ON CONSTRUCTION PROJECTS, APRIL 2011

	Type 1 Operations	Type 2 Operations	Type 3 Operations
Cristobalite and Tridymite	>0.05 to 0.50 mg/m^3	>0.50 to 2.50 mg/m^3	>2.5 mg/m^3
Quartz and Tripoli	>0.10 to 1.0 mg/m^3	>1.0 to 5.0 mg/m^3	>5.0 mg/m^3

Note: The classification of silica-containing construction tasks is based on presumed concentrations of respirable crystalline silica, as shown above.

TYPE 1 OPERATIONS

- The drilling of holes in concrete or rock that is not part of a tunnelling operation or road construction.
- Milling of asphalt from concrete highway pavement.
- Charging mixers and hoppers with silica sand (sand consisting of at least 95 per cent silica) or silica flour (finely ground sand consisting of at least 95 per cent silica).
- Any other operation at a project that requires the handling of silica-containing material in a way that may result in a worker being exposed to airborne silica.
- Entry into a dry mortar removal or abrasive blasting area while airborne dust is visible for less than 15 minutes for inspection and/or sampling.
- Working within 25 metres of an area where compressed air is being used to remove silica-containing dust outdoors.

TYPE 2 OPERATIONS

- Removal of silica containing refractory materials with a jackhammer.
- The drilling of holes in concrete or rock that is part of a tunnelling or road construction.
- The use of a power tool to cut, grind, or polish concrete, masonry, terrazzo or refractory materials.
- The use of a power tool to remove silica containing materials.
- Tunnelling (operation of the tunnel boring machine, tunnel drilling, tunnel mesh installation).
- Tuckpoint and surface grinding.
- Dry mortar removal with an electric or pneumatic cutting device.
- Dry method dust cleanup from abrasive blasting operations.
- The use of compressed air outdoors for removing silica dust.
- Entry into area where abrasive blasting is being carried out for more than 15 minutes.

TABLE C-3 (Continued)
SUMMARY OF CLASSIFICATION OF SILICA-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE, SILICA ON CONSTRUCTION PROJECTS, APRIL 2011

TYPE 3 OPERATIONS

- Abrasive blasting with an abrasive that contains ≥ 1 per cent silica.
- Abrasive blasting of a material that contains ≥ 1 per cent silica.

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