



Request for Quotations
For
Interior Door Replacement at Homelands Senior Public School

Request for Quotations No.: **RFQMA24-5035**
Issued: **April 17, 2024**

Submission Deadline: **May 6, 2024, at 3:00 p.m. local time**

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PART 1 – INVITATION AND SUBMISSION INSTRUCTIONS

1.1 Invitation to Respondents

This Request for Quotations (the “RFQ”) is an invitation by Peel District School Board (“the Board”) to prospective respondents to submit non-binding quotations for **Interior Doors Replacement at Homelands Senior Public School**, as further described in Section A of the RFQ Particulars (Appendix D) (the “Deliverables”).

1.2 RFQ Contact

For the purposes of this procurement process, the “RFQ Contact” will be:

John Marinescu

Email: john.marinescu@peelsb.com

Respondents and their representatives are not permitted to contact any employees, officers, agents, elected or appointed officials or other representatives of the Board, other than the RFQ Contact, concerning matters regarding this RFQ. Failure to adhere to this rule may result in the disqualification of the respondent and the rejection of the respondent’s quotation.

1.3 Type of Contract for Deliverables

The selected respondent will be requested to enter into a contract for the provision of the Deliverables on the terms and conditions set out in the Form of Agreement (Appendix A) (the “Agreement”). It is the Board’s intention to enter into a contract with one (1) legal entity, the lowest compliant bidder. The term of the contract is to be for a period of **Date of Award to August 23, 2024**.

1.4 Timetable

Issue Date of RFQ	April 17, 2024
Recommend Site Visit	April 25, 2024 Homelands Sr. P.S. April 16, 2024, at 3:00 P.M. 2420 Homelands Dr, Mississauga, ON L5K 1H2 All potential Respondents are to meet at the front entrance and await direction from the Board representative(s).
Deadline for Questions	April 26, 2024, 4:00 PM local time All questions must be submitted through Opportunity Q&A in Bonfire. See section 3.2.1 for details.
Deadline for Issuing Addenda	April 29, 2024, 4:00 PM local time
Submission Deadline	May 6, 2024, 3:00 PM local time
Anticipated Execution of Agreement	May, 2024

The RFQ timetable is tentative only, and may be changed by the Board at any time.

1.5 Submission of Quotations

1.5.1 Quotations to be Submitted at Prescribed Location

The Board will use the BonfireHub portal to accept and evaluate quotes digitally for this Request for Quote.

Please contact Bonfire at support@gobonfire.com for questions related to the uploading of your submission.

Upload your Submission at: <https://peelsb.bonfirehub.ca/opportunities>

Your Submission must be uploaded prior to the Submission Deadline established for this Quote.

- (a) Uploading large documents may take significant time, depending on the size of the file(s) and Respondent's internet connection speed.
- (b) Onus and responsibility rests solely with the Respondent to deliver its Quote as indicated in the details on or before the Submission Deadline. The Board does not accept any responsibility for submissions delivered to any other location by the Respondent or its delivery agents. Respondents are advised to make submissions well before the deadline. Respondents making submissions near the deadline do so at their own risk. Submissions shall be deemed to be received once they enter into the Bonfire system and a confirming email is returned to the submitting party. Respondent will receive an email from Bonfire with a unique confirmation receipt once they finalize their submission.
- (c) Only the number of files indicated in the Bidding System can be uploaded for each Requested Document. If an uploaded document(s) needs to be changed, the Respondent will need to first delete the old file before re-uploading a new file.
- (d) Respondent should not embed any documents within uploaded files as they will not be accessible.
- (e) Each submission file uploaded is instantly sealed and will only be visible after the closing date and time.
- (f) Each file has a maximum size of 1000MB. Any requested documents exceeding this limit will not be accepted by Bonfire.
- (g) Minimum system requirements: Internet Explorer 8/9/10+, Google Chrome, or Mozilla Firefox. Javascript must be enabled and Adobe Flash Player version 9+ installed.
- (h) There is no cost to the Respondent for uploading submission on Bonfire

1.5.2 Quotations to be Submitted on Time

Quotations must be submitted on or before the Submission Deadline. Quotations submitted after the Submission Deadline will not be accepted. Respondents are advised to make submissions

well before the deadline. Respondents making submissions near the deadline do so at their own risk.

1.5.3 Quotations to be Submitted in Prescribed Format

All respondents shall have a Bidding System vendor account and be registered as a plan taker for this opportunity, which will enable the respondent to download the solicitation document, to receive addenda email notifications, download addenda and submit their quotations electronically through the Bidding System.

Respondents are cautioned that the timing of their submission is based on when the quotation is received by the Bidding System, not when a quotation is submitted by a respondent, as transmission can be delayed due to file transfer size, transmission speed or other technical factors.

For the above reasons, the Board recommends that respondents allow sufficient time to upload their submission and attachment(s) (if applicable) and to resolve any issues that may arise. The closing date and time shall be determined by the Board's Bidding System web clock.

Respondents should contact the RFQ Contact at least twenty-four hours prior to deadline if they encounter any problems. The Bidding System will send a confirmation email to the respondent advising when the quotation was submitted successfully. If respondents do not receive a confirmation email, they should contact the RFQ Contact immediately.

To ensure receipt of the latest information and updates via email regarding this opportunity, or if a respondent has obtained this solicitation document from a third party, the onus is on the respondent to create a Bidding System Vendor account and register as a plan taker for the opportunity at <https://peelsb.bonfirehub.ca>.

1.5.4 Amendment of Quotations

Respondents may amend their quotations prior to the Submission Deadline. However, the respondent is solely responsible for ensuring that the amended quotation is received by the Bidding System by the Submission Deadline.

1.5.5 Withdrawal of Quotations

Respondents may withdraw their quotations prior to the Submission Deadline. However, the respondent is solely responsible for ensuring that the withdrawn quotation is withdrawn through the Bidding System by the Submission Deadline.

[End of Part 1]

PART 2 – EVALUATION AND AWARD

2.1 Stages of Evaluation

The Board will conduct the evaluation of quotations in the following stages:

2.2 Stage I – Mandatory Submission Requirements

Stage I will consist of a review to determine which quotations comply with all of the mandatory submission requirements. Quotations that fail to satisfy the mandatory submission requirements will be rejected. The mandatory submission requirements are listed in Section C of the RFQ Particulars (Appendix D).

2.3 Stage II – Mandatory Technical Requirements

The Board will review the quotations to determine whether the mandatory technical requirements as set out in Section D of the RFQ Particulars (Appendix D) have been met. Questions or queries on the part of the Board as to whether a quotation has met the mandatory technical requirements will be subject to the verification and clarification process set out in Part 3.

2.4 Stage III – Pricing

Stage III will consist of an evaluation of the submitted pricing in each qualified quotation in accordance with the price evaluation method set out in Pricing (Appendix C). The evaluation of price will be undertaken after the evaluation of mandatory requirements has been completed.

2.5 Selection of Top-Ranked Respondent

After the completion of Stage III, compliant respondents will be ranked based on the price evaluation. Subject to the process rules contained in the Terms and Conditions of the RFQ Process (Part 3), the top-ranked respondent will be invited to enter into the Agreement in accordance with Part 3. In the event of a tie, the selected respondent will be determined by way of best and final offer. The selected respondent will be notified in writing and will be expected to satisfy any applicable conditions of this RFQ, including the pre-conditions of award listed in Section E of the RFQ Particulars (Appendix D), and enter into the Agreement within the timeframe specified in the selection notice. Failure to do so may result in the disqualification of the respondent and the selection of another respondent or the cancellation of the RFQ.

[End of Part 2]

PART 3 – TERMS AND CONDITIONS OF THE RFQ PROCESS

3.1 General Information and Instructions

3.1.1 Respondents to Follow Instructions

Respondents should structure their quotations in accordance with the instructions in this RFQ. Where information is requested in this RFQ, any response made in a quotation should reference the applicable section numbers of this RFQ.

3.1.2 Quotations in English

All quotations are to be in English only.

3.1.3 No Incorporation by Reference

The entire content of the respondent's quotation should be submitted in a fixed form, and the content of websites or other external documents referred to in the respondent's quotation but not attached will not be considered to form part of its quotation.

3.1.4 References and Past Performance

In the evaluation process, the Board may include information provided by the respondent's references and may also consider the respondent's past performance or conduct on previous contracts with the Board or other institutions.

3.1.5 Information in RFQ Only an Estimate

The Board and its advisers make no representation, warranty or guarantee as to the accuracy of the information contained in this RFQ or issued by way of addenda. Any quantities shown or data contained in this RFQ or provided by way of addenda are estimates only, and are for the sole purpose of indicating to respondents the general scale and scope of the Deliverables. It is the respondent's responsibility to obtain all the information necessary to prepare a quotation in response to this RFQ.

3.1.6 Respondents to Bear Their Own Costs

The respondent will bear all costs associated with or incurred in the preparation and presentation of its quotation, including, if applicable, costs incurred for interviews or demonstrations.

3.1.7 Quotation to be Retained by the Board

The Board will not return the quotation or any accompanying documentation submitted by a respondent.

3.1.8 No Guarantee of Volume of Work or Exclusivity of Contract

The Board makes no guarantee of the value or volume of work to be assigned to the successful respondent. The contract with the selected respondent will not be an exclusive contract for the provision of the described Deliverables. The Board may contract with others for goods and

services the same as or similar to Deliverables or may obtain such goods and services internally.

3.2 Communication after Issuance of RFQ

3.2.1 Respondents to Review RFQ

Respondents should promptly examine all of the documents comprising this RFQ and may direct questions to or seek additional information from the RFQ Contact on or before the Deadline for Questions. All questions and communications by respondents may only be sent through the Opportunity Q&A in the Bonfire Portal. The Board will not answer any questions submitted by any other means. The Board will provide answers to any questions through the Bonfire Portal only.

The Board is under no obligation to provide additional information, and the Board is not responsible for any information provided by or obtained from any source other than RFQ Contact. It is the responsibility of the respondent to seek clarification from the RFQ Contact on any matter it considers to be unclear. The Board is not responsible for any misunderstanding on the part of the respondent concerning this RFQ or its process.

3.2.2 All New Information to Respondents by Way of Addenda

This RFQ may be amended only by addendum in accordance with this section. If the Board, for any reason, determines that it is necessary to provide additional information relating to this RFQ, such information will be communicated to all respondents by addendum. Each addendum forms an integral part of this RFQ and may contain important information, including significant changes to this RFQ. Respondents are responsible for obtaining all addenda issued by the Board. In the Submission Form (Appendix B), respondents should confirm their receipt of all addenda by setting out the number of each addendum in the space provided.

3.2.3 Post-Deadline Addenda and Extension of Submission Deadline

If the Board determines that it is necessary to issue an addendum after the Deadline for Issuing Addenda, the Board may extend the Submission Deadline for a reasonable period of time.

3.2.4 Verify, Clarify and Supplement

When evaluating quotations, the Board may request further information from the respondent or third parties in order to verify, clarify or supplement the information provided in the respondent's quotation, including but not limited to clarification with respect to whether a quotation meets the mandatory technical requirements set out in Section D of the RFQ Particulars (Appendix D). The Board may revisit, re-evaluate and rescore the respondent's response or ranking on the basis of any such information.

3.3 Notification and Debriefing

3.3.1 Notification to Other Respondents

Once an agreement is executed by the Board and a respondent, the other respondents may be notified directly in writing and will be notified by public posting in the same manner that this RFQ was originally posted of the outcome of the procurement process.

3.3.2 Debriefing

Respondents may request a debriefing after receipt of a notification of the outcome of the procurement process. All requests must be in writing to RFQ Contact and must be made within sixty (60) days of such notification.

3.3.3 Procurement Protest Procedure

If a respondent wishes to challenge the RFQ process, it should provide written notice within 10 days of debriefing to the RFQ Contact in accordance with the Board's procurement protest procedures and any applicable trade agreement or other applicable bid protest procedures. The notice must provide a detailed explanation of the respondent's concerns with the procurement process or its outcome. The Board will respond in accordance with Section 14 of its Procurement Regulations.

3.4 Conflict of Interest and Prohibited Conduct

3.4.1 Conflict of Interest

For the purposes of this RFQ, the term "Conflict of Interest" includes, but is not limited to, any situation or circumstance where:

- (a) in relation to the RFQ process, the respondent has an unfair advantage or engages in conduct, directly or indirectly, that may give it an unfair advantage, including but not limited to (i) having, or having access to, confidential information of the Board in the preparation of its quotation that is not available to other respondents, (ii) communicating with any person with a view to influencing preferred treatment in the RFQ process (including but not limited to the lobbying of decision makers involved in the RFQ process), or (iii) engaging in conduct that compromises, or could be seen to compromise, the integrity of the open and competitive RFQ process or render that process non-competitive or unfair; or
- (b) in relation to the performance of its contractual obligations under a contract for the Deliverables, the respondent's other commitments, relationships or financial interests (i) could, or could be seen to, exercise an improper influence over the objective, unbiased and impartial exercise of its independent judgement, or (ii) could, or could be seen to, compromise, impair or be incompatible with the effective performance of its contractual obligations.

3.4.2 Disqualification for Conflict of Interest

The Board may disqualify a respondent for any conduct, situation or circumstances, determined by the Board, in its sole and absolute discretion, to constitute a Conflict of Interest as defined above.

3.4.3 Disqualification for Prohibited Conduct

The Board may disqualify a respondent, rescind notice of selection or terminate a contract subsequently entered into if the Board determines that the respondent has engaged in any conduct prohibited by this RFQ.

3.4.4 Prohibited Respondent Communications

Respondents must not engage in any communications that could constitute a Conflict of Interest and should take note of the Conflict of Interest declaration set out in the Submission Form (Appendix B).

3.4.5 Respondent Not to Communicate with Media

Respondents must not at any time directly or indirectly communicate with the media in relation to this RFQ or any agreement entered into pursuant to this RFQ without first obtaining the written permission of the RFQ Contact.

3.4.6 No Lobbying

Respondents must not, in relation to this RFQ or the evaluation and selection process, engage directly or indirectly in any form of political or other lobbying whatsoever to influence the selection of the successful respondent(s).

3.4.7 Illegal or Unethical Conduct

Respondents must not engage in any illegal business practices, including activities such as bid-rigging, price-fixing, bribery, fraud, coercion or collusion. Respondents must not engage in any unethical conduct, including lobbying, as described above, or other inappropriate communications; offering gifts to any employees, officers, agents, elected or appointed officials or other representatives of the Board; deceitfulness; submitting quotations containing misrepresentations or other misleading or inaccurate information; or any other conduct that compromises or may be seen to compromise the competitive process provided for in this RFQ.

3.4.8 Past Performance or Past Conduct

The Board may prohibit a Respondent (or any individual that owns, controls, operates, manages or directs the Respondent) from participating in a procurement process based on past performance or based on inappropriate conduct in a prior procurement process, including but not limited to the following:

- (a) illegal or unethical conduct as described above;
- (b) the refusal of the Respondent to honour its submitted pricing or other commitments; or
- (c) any conduct, situation or circumstance determined by the Board, in its sole and absolute discretion, to have constituted an undisclosed Conflict of Interest;
- (d) litigation history.

3.5 Confidential Information

3.5.1 Confidential Information of the Board

All information provided by or obtained from the Board in any form in connection with this RFQ either before or after the issuance of this RFQ

- (a) is the sole property of the Board and must be treated as confidential;

- (b) is not to be used for any purpose other than replying to this RFQ and the performance of any subsequent contract for the Deliverables;
- (c) must not be disclosed without prior written authorization from the Board; and
- (d) must be returned by the respondent to the Board immediately upon the request of the Board.

3.5.2 Confidential Information of Respondent

A respondent should identify any information in its quotation or any accompanying documentation supplied in confidence for which confidentiality is to be maintained by the Board. The confidentiality of such information will be maintained by the Board, except as otherwise required by law or by order of a court or tribunal. Respondents are advised that their quotations will, as necessary, be disclosed, on a confidential basis, to advisers retained by the Board to advise or assist with the RFQ process, including the evaluation of quotations. If a respondent has any questions about the collection and use of personal information pursuant to this RFQ, questions are to be submitted to the RFQ Contact.

3.6 Procurement Process Non-binding

3.6.1 No Contract A and No Claims

This procurement process is not intended to create and will not create a formal, legally binding bidding process and will instead be governed by the law applicable to direct commercial negotiations. For greater certainty and without limitation:

- (a) this RFQ will not give rise to any Contract A–based tendering law duties or any other legal obligations arising out of any process contract or collateral contract; and
- (b) neither the respondent nor the Board will have the right to make any claims (in contract, tort, or otherwise) against the other with respect to the award of a contract, failure to award a contract or failure to honour a quotation submitted in response to this RFQ.

3.6.2 No Contract until Execution of Written Agreement

This RFQ process is intended to solicit non-binding quotations for consideration by the Board and may result in an invitation by the Board to a respondent to enter into the Agreement. No legal relationship or obligation regarding the procurement of any good or service will be created between the respondent and the Board by this RFQ process until the execution of a written agreement for the acquisition of such goods and/or services.

3.6.3 Non-binding Price Estimates

While the pricing information provided in quotations will be non-binding prior to the execution of a written agreement, such information will be assessed during the evaluation of the quotations and the ranking of the respondents. Any inaccurate, misleading or incomplete information, including withdrawn or altered pricing, could adversely impact any such evaluation or ranking or the decision of the Board to enter into an agreement for the Deliverables.

3.6.4 Cancellation

The Board may cancel or amend the RFQ process without liability at any time.

3.7 Governing Law and Interpretation

These Terms and Conditions of the RFQ Process (Part 3):

- (i) are intended to be interpreted broadly and independently (with no particular provision intended to limit the scope of any other provision);
- (j) are non-exhaustive and must not be construed as intending to limit the pre-existing rights of the parties to engage in pre-contractual discussions in accordance with the common law governing direct commercial negotiations; and
- (k) are to be governed by and construed in accordance with the laws of the province of Ontario and the federal laws of Canada applicable therein.

[End of Part 3]

APPENDIX A – FORM OF AGREEMENT

Appendix A consists of:

- Appendix A1 - PDSB Standard Terms and Conditions
- Appendix A2 - General Conditions

The PDF files for both documents are available for download on the Bonfire™ Bidding System Website under **RFQMA24-5035** at <https://peelsb.bonfirehub.ca>.

APPENDIX B – SUBMISSION FORM

1. Respondent Information

Please fill out the following form, naming one person to be the respondent's contact for the RFQ process and for any clarifications or communication that might be necessary.	
Full Legal Name of Respondent:	
Any Other Relevant Name under which Respondent Carries on Business:	
Street Address:	
City, Province/State:	
Postal Code:	
Phone Number:	
Fax Number:	
Company Website (if any):	
Respondent Contact Name and Title:	
Respondent Contact Phone:	
Respondent Contact Fax:	
Respondent Contact Email:	

2. Acknowledgment of Non-binding Procurement Process

The respondent acknowledges that the RFQ process will be governed by the terms and conditions of the RFQ, and that, among other things, such terms and conditions confirm that this procurement process does not constitute a formal, legally binding bidding process (and for greater certainty, does not give rise to a Contract A bidding process contract), and that no legal relationship or obligation regarding the procurement of any good or service will be created between the Board and the respondent unless and until the Board and the respondent execute a written agreement for the Deliverables.

3. Ability to Provide Deliverables

The respondent has carefully examined the RFQ documents and has a clear and comprehensive knowledge of the Deliverables required. The respondent represents and warrants its ability to provide the Deliverables in accordance with the requirements of the RFQ for the rates set out in its quotation.

4. Non-binding Pricing

The respondent has submitted its pricing in accordance with the instructions in the RFQ and in Pricing (Appendix C) in particular. The respondent confirms that the pricing information provided is accurate. The respondent acknowledges that any inaccurate, misleading or incomplete

information, including withdrawn or altered pricing, could adversely impact the acceptance of its quotation or its eligibility for future work.

5. Addenda

The bidder agrees that it is the bidder’s responsibility to obtain all addenda issued by the Board in the Board Bidding System Bonfire portal. The bidder hereby confirms it has received and accepted all addenda issued by the Board for the RFQ and its pricing assumptions and rate calculations has taken into consideration all the addenda for the RFQ.

6. No Prohibited Conduct

The respondent declares that it has not engaged in any conduct prohibited by this RFQ.

7. Conflict of Interest

Respondents must declare all potential Conflicts of Interest, as defined in section 3.4.1 of the RFQ. This includes disclosing the names and all pertinent details of all individuals (employees, advisers, or individuals acting in any other capacity) who (a) participated in the preparation of the quotation; **AND** (b) were employees of the Board within twelve (12) months prior to the Submission Deadline.

If the box below is left blank, the respondent will be deemed to declare that (a) there was no Conflict of Interest in preparing its quotation; and (b) there is no foreseeable Conflict of Interest in performing the contractual obligations contemplated in the RFQ.

Otherwise, if the statement below applies, check the box.

- The respondent declares that there is an actual or potential Conflict of Interest relating to the preparation of its quotation, and/or the respondent foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the RFQ.

If the respondent declares an actual or potential Conflict of Interest by marking the box above, the respondent must set out below details of the actual or potential Conflict of Interest:

8. Disclosure of Information

The respondent hereby agrees that any information provided in this quotation, even if it is identified as being supplied in confidence, may be disclosed where required by law or by order of a court or tribunal. The respondent hereby consents to the disclosure, on a confidential basis, of this quotation by the Board to the advisers retained by the Board to advise or assist with the RFQ process, including with respect to the evaluation this quotation.

Signature of Respondent Representative

Name of Respondent Representative

Title of Respondent Representative

Date

I have the authority to bind the respondent.

APPENDIX C – PRICING

1. Instructions on How to Provide Pricing

- Respondents should provide the information requested under section 3 below (“Required Pricing Information”) by reproducing and completing the table below in their quotations, or, if there is no table below, by completing the attached form and including it in their quotations.
- Rates must be provided in Canadian funds, inclusive of all applicable duties and taxes except for HST, which should be itemized separately.
- Rates quoted by the respondent must be all-inclusive and must include all labour and material costs, all travel and carriage costs, all insurance costs, all costs of delivery, all costs of installation and set-up, including any pre-delivery inspection charges, and all other overhead, including any fees or other charges required by law.
- Price ranges will not be accepted. All rates must be rounded to two (2) decimal places. Partial bids are not permitted. If an item is no charge or \$0.00 respondent shall indicate “0”.
- Additional work formally approved by the Board will be based on hourly rates. Hourly rates to apply to work completed during regular business hours, after hours, weekends and/or statutory holidays. No other charges to apply. HST is extra.
- THE TOTAL MARK-UP to the Board FOR ANY APPROVED MATERIALS is not to exceed 5% of the net cost of materials. The Board reserves the right to audit the cost by requesting copies of invoices for the materials purchased by the selected respondent(s). In addition, the Board reserves the right to source, purchase, and supply materials to the selected respondent(s) for any work awarded under this bid.

THE TOTAL MARK-UP to the Board FOR ANY SERVICES is not to exceed 15% of the net cost of labour (10% for overhead and 5% for profit) regardless of whether the labour is provided by the selected respondent or its subcontractors. The Board reserves the right to audit the cost by requesting copies of invoices for labour provided either by the respondent or its subcontractors.

Prices are to remain firm for the duration of the contract upon the execution of a written contract as a result of the RFQ.

2. Evaluation of Pricing

- (a) The grand total for Appendix 1 – Rate Bid Form will be used for evaluation.
- (b) Appendix 1 – Supplementary Bid will not to be evaluated. However, the Board reserves the right to negotiate submitted pricing for Provisional Items (Hourly Rates), if deemed not competitive in the opinion of the Board.

3. Required Pricing Information

APPENDIX 1 – RATE BID FORM (Bid Table **BT-03GK** in the Bonfire Bidding System).

APPENDIX D – RFQ PARTICULARS

A. THE DELIVERABLES

Interior Door Replacement at Homelands Senior Public School

The provision of the Deliverables will be governed by the terms and conditions set out in Appendix A – Form of Agreement and Appendix G, Specifications and Drawings.

B. MATERIAL DISCLOSURES

The total estimated contract value is \$298,000.

1. GENERAL CONDITIONS

The General Conditions form part of this RFQ document, and it is understood by the Respondent that attaching signature in Appendix B, the Respondent acknowledges having read and understood the General Conditions, Section – 01000, pages 1 - 34 as posted on Bonfire Bidding System. See Appendix A2 – General Conditions.

2. CONSTRUCTION LIEN ACT PAYMENT TERMS IN GENERAL CONDITIONS

The General Conditions have been revised to include changes related to the new Construction Act.

3. AWARDING OF WORK

The Board reserves the right to award contractors only the amount of work to which the Board is confident can be completed on schedule by the successful Respondent. In order to expedite the completion of work within the Term of Contract, the Board may distribute awards from bids at its sole and unfettered discretion. The decision of the Board will be final.

4. HAZARDOUS BUILDING MATERIALS

Hazardous building materials may be present in the vicinity. Please view the assessment and required abatement work located in Appendix F – Specifications and Drawings.

5. SAMPLES

Samples, when required, must be submitted strictly in accordance with instructions. Samples must be furnished free of charge and must be accompanied by descriptive memorandum invoices indicating if the Respondent requires their return, provided they have not been used or made useless by tests. Samples will be held at Respondent's risk and subject to the Respondent's expense.

6. RFQ DOCUMENT AND BONFIRE SYSTEM

If the word "Contract" is found in sections of the specifications and drawings it shall mean after the award of a contract to the successful respondent.

A respondent may not make any changes to any of the forms. Any submission containing any such changes, whether on the face of the form or elsewhere may result in the non-consideration of your submission.

7. PERFORMANCE SURETY OR AGREEMENT TO BOND

If the total value of the bid per location excluding all applicable taxes is less than \$500,000.00 then a Performance Surety is required. If greater than \$500,000.00 bonding is required. Refer to Pre-Conditions of Award for details.

8. Facility Key(s) Deposit

Pursuant to Maintenance Services Department General Conditions Section 01000, all facility key(s) will be issued by Maintenance Services Department to the successful general contractor following the receipt of facility key deposit(s) issued by the successful general contractor.

Upon completion of project work and/or the end of term of the contract, all applicable facility key deposit(s) will be returned by the Board to the successful general contractor in a form of direct deposit. Facility key deposit(s) issued by sub-contractor(s) will not be accepted by the Board.

C. MANDATORY SUBMISSION REQUIREMENTS

1. Submission Form - Appendix B

Each quotation must include a Submission Form (Appendix B) completed and signed by an authorized representative of the respondent.

2. Pricing Rate Bid Form - Appendix 1 (Bid Table BT-03GK in the Bonfire Bidding System)

Each quotation must include pricing information that complies with the instructions contained in Pricing (Appendix C).

3. Supplementary Bid – Questionnaire - Appendix 2 – (Questionnaire Q-26KR in the Bonfire Bidding System) – Not to be evaluated.

Each quotation must include above mentioned questionnaire.

D. MANDATORY TECHNICAL REQUIREMENTS

N/A

E. PRE-CONDITIONS OF AWARD

Respondent under consideration must provide the following information within (7) seven calendar days of notification or as otherwise agreed by the Board:

a) INSURANCE

The Respondent shall provide Commercial General Liability insurance coverage and Third Party Liability insurance coverage for both owned and non-owned motor vehicles in accordance to the Board's Standard Terms and Conditions – Form of Agreement under Appendix A.

b) WORKPLACE SAFETY AND INSURANCE BOARD (WSIB)

The Respondent shall provide proof of WSIB coverage in accordance to the Board's Standard Terms and Conditions – Form of Agreement under Appendix A.

c) CONTRACTOR ASBESTOS AWARENESS TRAINING

All contractor's employees and staff, including subcontractors where applicable, who will work at any PDSB facilities are required to complete the Contractor Asbestos Awareness Training at Contractor Asbestos Awareness Training Video Link :

https://drive.google.com/file/d/1dpmv5apl3CmiF-tp_-NMtyx-0Lq54-JP/view prior to beginning of the work at the Board. It is the contractor's responsibility to ensure that all their personnel receive this training timely and all training records, if applicable, are kept on file and are available upon Board request.

c) AGREEMENT TO BOND (If project is greater than \$500,000)

Agreement to Bond from an approved bonding company for a 50% performance bond and a 50% labour and material bond.

The respondent acknowledges and agrees to comply with the special provisions specified with respect to the wording/and or conditions under which the Performance bond may be invoked and remain in force as a Maintenance bond.

The latest editions of Forms 31 (Labour and Material Bond) and Form 32 (Performance Bond) to be submitted.

d) PERFORMANCE SURETY (If project is less than \$500,000)

The Performance Surety requirement from the successful Respondent will be in the amount of 10% of the dollar award excluding all applicable taxes.

The successful Respondent will secure an original Irrevocable Letter of Credit or a Certified Cheque or Money Order or Bank Draft payable to Peel District School Board, which has been issued by a Canadian Chartered Bank or Trust Company, in the appropriate amount. If the Irrevocable Letter of Credit is the vehicle chosen for the Performance Surety, it must be identical to the form as presented in this RFQ document, Appendix 1 attached. The

Performance Surety, either an Irrevocable Letter of Credit or a Certified Cheque, Money Order or Bank Draft will be deposited with and held by the Board prior to the commencement of the contract. The Performance Surety may be drawn on by the Board at any time to secure the due performance and observation of the contract; the payment of all claims, liabilities and obligations incurred by the successful Respondent during the performance of the contract. Such Performance Surety will not be released until sixty (60) days after substantial performance of the contract and the full discharge of all claims, liabilities and obligations incurred by the successful Respondent during the performance of this contract. The successful Respondent further covenants and agrees that, where the contract has been terminated or cancelled by virtue of the successful Respondent's default, the said Performance Surety will not be revoked or cancelled, and the Board may draw from the Performance Surety to compensate for such damages, losses or expenses incurred, or to be incurred, for which the Board may not be otherwise liable. Should the said damages, losses or expenses be in excess of the amounts drawn, the successful Respondent shall be liable to the Board for such excesses.

The Performance Surety is to guarantee that the successful Respondent will complete the contract in a proper and satisfactory manner in accordance with the terms and conditions of the RFQ and must be presented by the successful Respondent to the Board as requested at the time of the award. Failure to provide the proper surety may result in the rescission of the Board's notice of selection. No interest will be either charged or retained by or to the Board in relation to the Performance Surety.

APPENDIX E – LETTER OF CREDIT

(BANK) _____ NO. _____

(BRANCH) _____ (DATE) _____

TO:

WE HEREBY AUTHORIZE YOU TO DRAW ON (BANK)
FOR ACCOUNT OF
UP TO AN AGGREGATE AMOUNT OF
AVAILABLE BY DRAFTS AT SIGHT
GUARANTEE AS FOLLOWS:

Pursuant to the request of our customer, _____
we, (Bank) _____ hereby establish and give to
you an Irrevocable Letter of Credit in your favour in the total amount of \$ _____ which may be
drawn on by you at any time and from time to time upon written demand for payment made upon us by you, which
demand we shall honour without enquiring whether you have a right as between yourself and our said customer to
make such demand and without recognizing any claim of our said customer.

PROVIDED, however, that you are to deliver to (Bank) _____
at such time as a written demand for payment is made upon us, a certificate signed by the Associate Director of
Corporate Services of The Peel District School Board agreeing and/or confirming that monies drawn pursuant to this
Letter of Credit are to be and/or have been expended pursuant to obligations incurred or to be incurred by you with
reference to (description of services or projects) _____

This Letter of Credit shall commence on _____ and shall expire on _____
_____ subject to the conditions of automatic extension, as set out herein.

IT IS A CONDITION of this Letter of Credit that it shall be automatically extended without amendment for one year
from the expiry date, and thereafter from year to year unless sixty days prior to the present or future expiry date we
shall notify the Associate Director of Operational Support Services of The Peel District School Board in writing that we
elect not to consider this Letter of Credit renewed for any such additional period. Upon receipt by you of such notice;
you may draw hereunder by means of your demand accompanied by your written certification that the amounts drawn
will be retained and used by you to meet obligations incurred or to be incurred by you in connection with (description
of services or projects) _____.

THE DRAFTS DRAWN UNDER THIS CREDIT ARE TO BE ENDORSED HEREON AND SHALL STATE ON THEIR
FACE THAT THEY ARE DRAWN UNDER (BANK) _____
(BRANCH) _____ LETTER OF CREDIT NO. _____
(DATE) _____

WE HEREBY AGREE WITH THE DRAWERS, ENDORSERS OF THE BILLS DRAWN IN COMPLIANCE WITH THE
TERMS OF THIS CREDIT THAT THE BILLS SHALL BE DULY HONOURED UPON PRESENTATION AT THE
DRAWEE BANK.

(Accountant)

(Manager)

APPENDIX F - BONDING

1. The Contractor, after receiving written notification from the Board representative *or where the Contract Price exceeds \$500,000*, shall furnish and deliver to the Board within ten (10) days of such notification, and/or prior to the signing of the Contract: (1) a *Labour and Material Bond, with a coverage limit of at least 50% of the Contract Price, which extends its protection to any Subcontractors supplying labour and materials to the Work*; and (2) a *Performance Bond, with a coverage limit of at least 50% of the Contract Price*, and guaranteeing the faithful performance of the Contract in accordance with the Contract Documents including the requirements of **WARRANTY** and the payment of all obligations incurred in the event of the Contractor's default. Obligations incurred in the event of the Contractor's default shall include, but not be necessarily limited to the following:
2. The payment of all legal, accounting, architectural, engineering, and other Consultants' expenses incurred by the Board in determining the extent of the Work executed, and any additional work required as a result of the interruption of the Work, and
3. The payment of additional expenses to the Board in the form of watchmen's services, light, heat, power, etc., payable over the period between the default of the Contract and the commencement of the Work under the terms of this Contract Requirement.
4. Without limiting the foregoing in any way, the Performance Bond shall indemnify and hold harmless the Board from and against any and all costs and expenses (including legal and architectural services and court costs) arising out of or as a consequence of any default of the Contractor under the Contract.
5. The Bonds shall be in the most recent form approved by the Canadian Construction Association modified as may be necessary to incorporate the requirements stated herein. For the amount of the Bonds, refer to the **MATERIAL DISCLOSURES** section of RFQ document.
6. The Contractor shall be responsible for notifying the surety company of any changes made to the Contract during the course of construction.
7. The premiums for all Bonds called for in the RFQ shall be included in the Contract Price.
8. Should the Board require provisions of any additional Bonds by the Contractor after the receipt of RFQ for the Work, the Contract Price shall be increased by all costs attributed to providing such Bonds. The Contractor shall promptly provide the Board through the Consultant, with any such Bonds that may be required.
9. The Bonds required hereunder must be issued by an insurer licensed under the Insurance Act to write surety and fidelity insurance and be approved by the Board.



CONSULTANTS
Occupational Hygiene & Environment

APPENDIX G - SPECIFICATIONS AND DRAWINGS

BID DOCUMENTS

INTERIOR DOOR REPLACEMENT

Homelands Senior Public School

2420 Homelands Drive,
Mississauga, Ontario, L5K 1H2

Prepared for:

Peel District School Board

933 Central Parkway West
Mississauga, Ontario, L5C 2T9

Attention: Mr. Jason Payne

Prepared by:

OHE Consultants

311 Matheson Blvd. East
Mississauga, Ontario, L4Z 1X8
PDSB PROJECT No. SG-323-22/23-4
OHE Project No.: 28769

February 9, 2024



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DRAWINGS

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APPENDICES

Appendix A:	Pre-Renovation Hazardous Building Materials Survey – OHE Consultants
Appendix B:	Hazardous Lead Abatement Specifications – OHE Consultants

DIVISION 01 — GENERAL REQUIREMENTS

SECTION 01 00 00 — SCOPE OF WORK

PART 1 - OBJECTIVE

1.1 DESCRIPTION AND CONDITIONS

- .1 Scope of Work under this project will include replacing interior doors and frames where indicated on Drawing number SK-1 and SK-2.
- .2 Provide all required materials and labour to paint the existing hollow metal frames and wood overhead panels as indicated on door schedule and as per Section 09 91 20. The paint colour to be approved by PDSB.
- .3 Provide shop drawings for the doors within two (2) weeks after the project award. After approval of all submittals, manufacturing shall begin immediately upon approval of engineered shop drawings and general installation shall begin immediately upon mock-up approval.
- .4 The work shall commence upon award of the bid and proceed in a single phase of work until completion. All work shall be performed on site from 7AM to 9PM Monday to Sunday during the school summer holiday, and from 4PM to 9PM on weekends and holidays after the summer holiday. All work shall be completed by August 23, 2024. In the event that all work cannot be completed by August 23, 2024 the awarded contractor will be responsible to continue work at alternate times so as not to impact the daily functioning of the school. Restrictions of work may vary and shall be determined during the pre-construction meeting. All remaining work must be completed no later than December 27, 2024. General Contractor to include all costs that may result in extended after hour work. There will be no extra claims/premium rates allowed.
- .5 Contractor to abide with local noise by-laws. The work shall be performed according to the start date and duration given in the bid document.
- .6 Provide Consultant and PDSB with the work schedule indicating lead time for shop drawings, with the on-site start date and completion date as per the bid document.
- .7 All work is to be completed in accordance with applicable legislative requirements.
- .8 A review of the interior of the building shall be conducted with the Consultant prior to the project start-up and after project completion. The Contractor shall submit a report complete with photographs and notes to establish pre-existing conditions/damaged areas.
- .9 Protect the work area to minimize the spread of debris and garbage Protection provided shall meet both environmental and occupational health and safety requirements of the Province of Ontario and all Owner's requirements.
- .10 The Contractor shall notify PDSB and the Consultant via weekly emails providing updates

- and planned work of the project.
- .11 Consultant shall evaluate the contractor's performance executing the work.
 - .12 After approval of all submittals, manufacturing and installation shall begin immediately.
 - .13 Protect school staff, students, and visitors from all work related debris and materials.
 - .14 Protect on-site staff, vehicles, and visitors from all work-related debris and materials.

PART 2 - GENERAL

2.1 MOBILIZATION AND DEMOBILIZATION

- .1 Mobilize all labour, equipment, temporary facilities, and hoarding required to carry out the work of the Bid Document. All scaffolding must be reviewed and bear the stamp of a licensed Professional Engineer practicing in the Province of Ontario.
- .2 Open dumpsters shall not be permitted for fire safety. All dumpsters shall be covered and enclosed in 6ft. chain link fence to prevent access into the bins during off work hours.
- .3 Upon completion of the project, remove all equipment and materials from the site. Clean the site to remove all dirt and debris from the work area and adjacent parking lot (including a magnetic sweep to pick-up all fasteners and metallic debris). Clean all doors within the work area. Correct all deficiencies caused by the work and make good any areas affected by the work.

2.2 SHOP DRAWINGS & SUBMITTALS DURING CONSTRUCTION

- .1 Prior to general fabrication, as identified within the technical sections of these specifications, submit to the Consultant and Owner all required shop drawings and requested technical literature pertaining to, but not limited to the following:
 - .2 Door shop drawings.
 - .3 Door frame structural stiffening.
 - .4 Technical information for specified materials.
 - .5 Colour charts and samples for the doors, paint, sealants, hardware, and weather-stripping.

2.3 MOCK-UP

- .1 At a location selected by PDSB, complete a full interior door and frames installation and mock-up assembly on site, including hardware.

2.4 DESIGNATED SUBSTANCE ABATEMENT

- .1 All abatement work is to be carried out by licensed abatement Contractors: PDSB approved abatement Contractors are as follows:
 1. Caliber Environmental – Contact: Michael Ball (416-997-6074);
 2. Furcon Environmental – Contact: Sherry Lynn (905-741-9686);
 3. Edge Environmental – Contact: Nabil Atrrach (416-574-4455); or
 4. Approved alternate.
- .2 The Contractor shall provide the Consultant with minimum 72 hours' notice in writing before abatement work begins.
- .3 Designated Substances (Asbestos, lead, and PCBs) have been identified in some of the existing materials. Refer to Appendix A and B for a summary of the locations and the requirements for abatement. Abatement is to be included as part of this project. The successful bidder is required to fully understand the environmental report before commencing the work.

2.5 REPLACE STEEL DOORS AND FRAMES

- .1 To the extent shown on Drawings number SK-1 to SK-7. Remove and dispose of the doors and frames where indicated.
- .2 Supply and Install new doors and frames as indicated in the Door Schedule and as per Drawings No. SK-3 and SK-4. Inspect and Install door hardware as indicated on the Hardware Schedule. All new doors and frames shall be painted prior to being delivered to site as per Section 09 91 20 – Painting Steel.
 1. Interior Doors

Supply and install new hollow metal doors and frames as indicated on Drawings, Door Schedule, and as per Section 08 11 00- Hollow Metal Doors and Frames of the Specification. The installation is to include all hardware and thresholds at all doors. Door and side-lites to be single glazed glass. Frame location and frame depth to match existing frames unless indicated otherwise, with proportions to be as outlined in the drawings. Install additional structural reinforcing components above the ceiling to support new two interior door frames at the hallway. See interior door schedule for doors requiring ceiling reinforcement. Provide shop drawings for the structural reinforcing components, stamped by a professional engineer licensed to practice in the province of Ontario for review.
 2. Door Hardware

Contractor to pick up, inspect and install door hardware as per **Section 08 00 10 - Hardware Schedule**. In case of any discrepancies in the Hardware Schedule, Contractor shall immediately notify the Consultant and request clarification prior to

proceeding with the installation. All hardware should be installed as per manufacturer's instructions by a qualified hardware installer.

2.6 MISCELLANEOUS

- .1 Where present, disconnect, and subsequently reconnect existing emergency lighting electrical conduit in the head of the door to facilitate the work, and disconnect and subsequently reconnect security systems at all doors. Where new frames are being installed, conduits at doors must run within the new frames and not be surface mounted.
- .2 Remove and salvage the existing barrier-free door operators, except where indicated on the Door Schedule.
- .3 Remove, salvage, and subsequently reinstate any sensors, exit signs, lights, fire alarms, etc., mounted on the doors.
- .4 Perimeter Sealants - Install building sealants within the work area.
- .5 Damage:
 1. Any damage (as determined by the Consultant) to the interior finishes, interior window sills, baseboard heating elements/covers, electrical chases, tiles, ceiling finishes, drywall/plaster, flooring, etc., shall be repaired at the Contractor's expense with no cost to the PDSB. Notify the Consultant for review of such locations immediately upon discovery. The Contractor shall pay for the repairs to the damaged areas where noticed at no costs to the PDSB.
- .6 All Other Items
 1. Examine and record the job existing conditions before commencement of work. Commencement of work will denote acceptance of existing conditions unless the Owner/Consultant has been notified in writing of unacceptable conditions prior to commencement.
 2. Include for all labor, equipment, materials and access required to complete the project not otherwise itemized above.

END OF SECTION 01 00 00

DIVISION 01 — GENERAL REQUIREMENTS

SECTION 01 34 00 — SUBMITTALS

PART 1- PRE-COMMENCEMENT REQUIREMENTS

1.1 PRE-COMMENCEMENT SUBMITTALS

- .1 The Contractor shall submit the following documents prior to the commencement of work:
 - .1 A project schedule.
 - .2 A site condition report including the list of pre-existing deficiencies, complete with photographs, prior to time of mobilization.
 - .3 Contractors' and Sub-contractors' Site Specific Health and Safety Plan for review.
 - .4 Evidence of compliance with the requirements of the Province regarding workers' compensation insurance including payments due there under.
 - .5 Any and all forms of Bonds, as required.
 - .6 All required Safety Data Sheets (SDS).
 - .7 Warranty registration and proof of registration with each respective manufacturer upon start of the project.
 - .8 List of Materials for review by the Consultant.
 - .9 Name, address, telephone number, and contact of:
 - .1 Project Manager
 - .2 Site Supervisor
 - .3 Foreman
 - .4 Sub-Contractors
 - .5 Materials Manufacturers
 - .6 Local Material Suppliers

1.2 GLAZING

- .1 Submit IGMAC Certificate – Submit up to date IGMAC certificate from IGU

manufacturer.

- .2 If proposing any glazing products or components other than those specified, provide technical data sheets showing comparable performance.

1.3 SEALANTS

- .1 Submit to PDSB and to the consultant one (1) sample each of the proposed sealants; joint backing (backer rods, expandable foam insulation etc.), cleaning material(s) and primer(s), if any for review and approval by PDSB prior to their use on the project.
- .2 Samples shall be clearly labelled as to material, application and supplier.

1.4 DOORS

.1 SHOP DRAWINGS

- .1 Contractor shall carry out final measurements (on site – door by door) to prepare shop drawings for submittal to the Consultant. Photographs of each door assembly including the frames shall be marked and labeled properly and referenced to the floor plan. These labelled photographs must be submitted with the shop drawings during the review process.
- .2 Submit shop drawings to Consultant for review. Doors and frames to be coded as per schedule. Prior to general fabrication, submit to the consultant and to PDSB all required shop drawings and requested technical literature pertaining to, but not limited to the following:
 - .1 Steel door and frame shop drawings.
 - .2 Glass and Glazing.
 - .3 Technical information for specified materials.
 - .4 Door performance test reports.
 - .5 Colour charts and samples for the door slab and frame, hardware, and weather stripping.
- .2 The shop drawings shall include:
 - .1 Detail method of assembly, reinforcing, fastening, and field jointing, splicing, stop securing.
 - .2 Type, thickness and gauge of all materials.
 - .3 Material and quality of all finishes.
 - .4 Doors and frames bearing ULC labels for ratings and opening classifications.
 - .5 Identify, mark and key for site locations. Markings to be concealed when hollow metal

items are installed and finished.

- .6 Legend indicating all abbreviations and symbols.
- .7 Layout of all typical doors, including overall height and width, size of IGUs/ vision units/ spandrel panels in the assembly.
- .8 Door swing.
- .9 Proposed anchorage to surrounding walls and structure, including location, type, size, model and manufacturer of fasteners. Design anchorage to meet or exceed local Building Code (current edition) minimum requirements.
- .10 Hardware schedule for each door.
- .11 Glazing details including, but not limited to, glass and IGU thicknesses, description of IGU perimeter seals and spacer materials.

1 MOCK-UPS

- .1 After award of bid document and prior to start of general installation, install a mock-up of all typical doors for review by the Consultant and the Owner. The mock-up shall include all hardware, perimeter seals and interface details.
 - .1 Mock-up to be representative of the work for the remainder of the project. The mock-up shall be used as a reference for quality of the work to be expected for the duration of the project.
 - .2 Mock-up shall be installed by the same installers who will perform the general installation.
 - .3 Any deviations from the shop drawings, if found to be necessary due to site conditions, shall be reviewed by the engineer who prepared the shop drawings and revised shop drawings shall be provided prior to general installation.
 - .4 Arrange for the Consultant to be present during installation of the mock-up, to facilitate review of components that may be concealed once the installation is complete.
 - .5 Mock-up installation and testing shall be complete, to the satisfaction of PDSB and the Consultant, prior to proceeding with general installation.

PART 2- WARRANTIES

2.1 GENERAL

- .1 The contractor shall provide a written guarantee for all work against defects in materials and workmanship for a period of two (2) years unless otherwise noted.

2.2 REMOVAL AND DEMOLITION

- .1 Repair and/or replace any work judged defective by the Board Designee/Engineer and any other work damaged due to faulty or defective work at no additional cost during the term of the warranty.

2.3 HOLLOW METAL DOOR AND FRAME

- .1 The contractor shall provide a manufacturer's warranty for the hollow metal doors and frames against defects in materials and workmanship for a period of three (3) years. The written warranty shall be in a form approved by the owner. The warranty shall cover all components of the door and frame assembly.
- .2 All hollow metal doors and frames shall be warranted for a period of ten (10) years against rust perforation and loss of paint adhesion, when installed and finish painted to the manufacturer's recommendation.

2.4 HARDWARE

- .1 The Supplier and contractor shall provide a written warranty for hardware finish and installation against defects in materials and workmanship for a period of three (3) years. The written warranty shall be in a form approved by the owner. The warranty shall cover all components of hardware accessories.
- .2 The Supplier shall provide a manufacturer's warranty for the panic devices and door closers against defects in materials and workmanship for a period of three (3) years. The written warranty shall be in a form approved by the owner.

2.5 GLAZING

- .1 The Supplier shall provide a manufacturer's warranty for the insulated glass units against defects in materials and workmanship for a period of ten (10) years. The written warranty shall be in a form approved by the owner. The warranty shall cover all components of the glass units.
- .2 The Supplier shall provide a manufacturer's warranty for the standard glass and fire-rated glass against defects in materials and workmanship for a period of five (5) years. The written warranty shall be in a form approved by the owner. The warranty shall cover all components of the glass units.
- .3 Supply all materials, labour, tools and equipment to repair and/or replace any work judged defective by the Engineer, and any other work damaged due to faulty or defective, at no additional cost during the term of the warranty.
- .4 The warranty shall not be pro-rated over the ten (10) year period for insulated glass units, and five (5) years for standard glass and fire-rated glass.

2.6 SEALANT

- .1 The Contractor shall provide a manufacturer's warranty for all work of this section against defects in materials and workmanship for a period of five (5) years. The

written warranty shall be in a form approved by the Owner. The warranty shall cover all components of the sealant.

- .2 The manufacturer shall supply all labour, materials, tools and equipment to repair and/or replace any material defects, at no additional cost, for a period of five (5) years.
- .3 The warranty shall not be pro-rated over the five (5) year period.

PART 3- POST COMMENCEMENT REQUIREMENTS

3.1 POST COMMENCEMENT SUBMITTALS

- .1 The Contractor shall submit the following documents throughout the duration of the Work:
 - .1 An updated project schedule, as requested by the Owner and/or Consultant.
 - .2 Timely invoices.
 - .3 Valid WSIB Certificate and Statutory Declaration on all invoices.

PART 4- SUBSTANTIAL PERFORMANCE REQUIREMENTS

4.1 SUBSTANTIAL PERFORMANCE SUBMITTALS

- .1 The Contractor shall submit the following documents at the completion of the Work:
 - .1 Warranty letters from all required manufactures to be submitted with final invoice or payment will be withheld until warranty is received.
 - .2 All warranties shall be issued to the Peel District School Board (PDSB) within two (2) working days following the date of substantial completion (as indicated in writing by the Board Designee /Consultant).
 - .1 Certificate of Publication.
 - .2 Manuals for all new equipment.
 - .3 As-Built drawings.
 - .4 Name, address telephone number and contact person of:
 - .5 General Contractor
 - .6 Sub-Contractors

- .7 Materials Manufacturers
- .8 Local Material Suppliers
- .9 Maintenance instructions and frequency of maintenance and revising.
- .10 Respective guarantees on materials and workmanship in writing and signed as required by the Contract Documents.

END OF SECTION 01 34 00

DIVISION 01 — GENERAL REQUIREMENTS
SECTION 01 50 00 — TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 POWER

- .1 Obtain electrical power from existing building exterior outlets only.

1.2 WATER SUPPLY

- .1 Obtain water from existing exterior hose bibs only.

1.3 TEMPORARY ENCLOSURES

- .1 Provide all necessary protection to existing facilities within the building, using temporary enclosures as required. The integrity of these enclosures shall be maintained by the Contractor during the course of the work.

1.4 TOILET FACILITIES

- .1 The use of existing Toilet designated by PDSB will be permitted by Contractor's workmen.

1.5 SMOKING

- .1 No smoking is allowed on Site.

1.6 SIGNAGE

- .1 Be responsible for all signage necessary to maintain safe Work. All signage to be stenciled or professionally printed.
- .2 No advertising, Contractor or product signage will be permitted on site without prior approval from the PDSB.

1.7 DISPOSAL BINS

- .1 The storage location for the disposal bin shall be on grade in an area designated by the PDSB. Existing asphalt shall be protected from damage by bins. The Contractor shall make good damage created by bins.
- .2 Do not stockpile debris on any portion of the structure. Remove debris from the site every day on a daily basis.

1.8 PROTECTED ACCESS AND PROJECT STAGING

- .1 Provide and maintain two-way vehicular access at all times during the construction period. Provide all necessary traffic and pedestrian control and co-ordination including signage throughout the course of construction. Provide and supply all labour to operate any traffic control system where required and installed.

1.9 TRAFFIC DIVERSIONS

- .1 Obtain all necessary permits and provide and maintain temporary barricades, hoardings and signage to divert vehicular or pedestrian traffic on city streets or sidewalks.

END OF SECTION 01 50 00

DIVISION 02 — EXISTING CONDITIONS

SECTION 02 41 00 — SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- .1 Conform to the provisions of Division 1, General Requirements.
- .2 Comply with any requirements set-out in a designated substances survey where available.

1.2 RELATED WORK

- .1 Scope of Work.....Section 01 00 00
- .2 Joint Sealants.....Section 07 92 00
- .3 Metal Doors and Frames.....Section 08 11 00

1.3 DESCRIPTION OF WORK

- .1 Work will include:
 - .1 Removal and disposal of the existing interior doors and frames as indicated/specified.
 - .2 Removal and disposal of all materials not required to remain as part of the work.
 - .3 Other materials required to facilitate the work.

1.4 PERMITS AND REGULATIONS

- .1 Where required, arrange and pay for all permits, notices and inspections necessary for the proper execution and completion of the demolition work.
- .2 Unless otherwise specified, carry out work of demolition in accordance with CSA S350-R2003 Code of Practice for Safety in Demolition of Structures, Ontario Building Code and to requirements of Ontario Occupational Health and Safety Act and Regulations for construction projects.
- .3 Comply with all fire safety regulations and procedures required by Construction Safety Act of Ontario, Ontario Building Code and Municipal Authorities having jurisdiction.

PART 2 - PRODUCTS, MATERIALS & EQUIPMENT

2.1 EQUIPMENT

- .1 Equipment employed shall not cause overloading of the structure. Temporary support shall be provided where necessary for the proper execution of the work.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Prior to removals, verify on site with the Consultant items designated for removals including the extent of removal.
- .2 Record existing locations of all luminaires and any other penetrations.

3.2 DEMOLITION AND REMOVAL

- .1 Remove and dispose interior door slabs and frames as specified. Ensure that the method of removal does not damage the existing adjacent walls and other components which are to remain. .
- .2 Remove and dispose of existing interior sealant components as required to complete the work as required. Ensure that the method of removal does not damage the existing adjacent wall components or substrates which are to remain.
- .3 Use extreme care at all times. Confine effects of demolition to those parts which are to be demolished.
- .4 Dispose of all removed materials and stored off site in a legal manner.
- .5 Demolition and disposal of garbage and debris shall proceed simultaneously.
- .6 In order to reduce dispersion of dust and dirt, the Contractor will be required to wet down and keep wet the structures before and during demolition operations, all garbage and debris stockpiled on the site, and all garbage or debris being loaded for disposal off-site.
- .7 The Contractor shall be responsible for all damage to private or public property as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all work performed until completion and final acceptance by the Owner and Consultant.
- .8 Use extreme care at all times. Confine effects of demolition to those parts which are to be demolished.
- .9 The following methods of demolition will not be permitted during work of this contract:
 - .1 Use of rapid failure methods (explosives).

- .2 Mechanical method of demolition whereby wrecking is accomplished by smashing walls or floors with heavy weight suspended by cable from boom or hoist.
- .10 Perform work in a manner so as not to inconvenience persons outside those parts which are to be demolished.
- .11 Do not overload any roof, floor or wall with accumulations of material or debris or by any other loading.
- .12 Do not sell or burn materials on site.
- .13 Remove existing equipment, services and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.
- .14 Leave work in safe condition so that no part is in danger of toppling or falling at end of each day's work.
- .15 Demolish in a manner to minimize dusting. Keep dusty materials wetted.

3.3 DISPOSAL

- .1 Dispose of debris on a continuous basis. Do not stockpile debris in a manner which would overload the structure.
- .2 Dispose of demolished materials except where noted otherwise.
- .3 Implement a waste management 3 R's program on this project site wherever feasible. Segregate from debris all materials which presently can be recycled or reused. Transport these materials to a reuse or recycling facility.
- .4 Materials not acceptable for reuse or recycling shall be disposed of at an appropriate and authorized landfill / lake fill site.
- .5 Take measures to control dust during disposal operations.
- .6 Cost of transporting to dump site and for dumping of materials, etc., are to be included in the Bid Price.
- .7 Treasure, such as coins, bills, paper of value, and articles of antiquity, discovered during demolition work at the site shall remain property of Owner.

3.4 EXISTING SERVICES

- .1 Obtain all utility locates prior to excavation.
- .2 Disconnect all electrical and telephone service lines in the areas to be demolished. Post warning signs on all electrical lines and equipment that must remain energized to serve other areas during period of demolition. Disconnect electrical and telephone service lines in demolition areas to the requirements of local authority having jurisdiction.

- .3 Disconnect and cap all mechanical services in accordance with requirements of local authority having jurisdiction. Natural gas supply lines shall be removed by the gas company or by a qualified tradesman in accordance with gas company instructions.
- .4 Essential Services: Maintain all essential services to all areas.
- .5 In each case notify the affected utility company in advance and obtain approval where required, before commencing with the work on main services.

3.5 PROTECTION

- .1 Supply and maintain all necessary protective screens and/or barriers around all entrance doorways and ramps to protect the vicinity of work areas from debris and other similar hazards.
- .2 Maintain perimeter safety fencing around work area for duration of work.
- .3 Protect adjacent surfaces against damage which might occur from falling debris or other causes related to the work. Maintain free and safe passage to and from and within the buildings.
- .4 All obstructions shall be adequately barricaded and lit at night.
- .5 Prevent debris from blocking any building, site or municipal drainage system.

END OF SECTION 02 41 00

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This Section specifies the materials and methods for work involving sealants.

1.2 REFERENCE STANDARDS

- .1 ASTM INTERNATIONAL
- .2 ASTM C1382, "Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints".
- .3 ASTM C1248, "Standard Test Method for Staining of Porous Substrate by Joint Sealants"

1.3 QUALIFICATIONS

- .1 Surface preparation and sealant installation to be completed by a recognized specialized applicator who is thoroughly trained and competent in all aspects of this work.

1.4 INSPECTIONS AND TESTING

- .1 Notify Consultant for review of surface preparation prior to sealant application and completed sealant application prior to demobilizing from each work area.

1.5 QUALITY CONTROL

- .1 Sealant to be applied as specified. Poor sealant application shall be rejected, removed and re-applied at the Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 General
- .2 Sealant colour to be approved by PDSB during mock-up and to conform to the below:

Table 1 – Colour Matching Requirements

Substrate	Requirement	Comment
Door Frames	Match the surfaces to be caulked	
	Match the original (non-faded, clean) sealant colour	
	Standard colour from manufacturer’s colour chart	preferred colour or shade
	Custom colour	exact colour or shade i.e. “blue to match existing flashing”

2.2 SOLVENTS AND PRIMERS

- .1 Ensure solvents/cleaners for surfaces to receive sealant are compatible with surfaces to receive cleaner (i.e. solvent). Sealant manufacturer to recommend and approve in writing the cleaner type(s) for each sealant.
- .2 Ensure primers are recommended by sealant manufacturer in writing for surfaces to be adhered to and are not detrimental to surface to which it comes in contact.

2.3 EXTERIOR AND INTERIOR SEALANTS

- .1 Silicone Sealants
 - 1. At exterior and interior joints use one of the following Type S, Grade NS, Class 50, moisture curing silicone sealant, conforming to ASTM C 920:

Table 2 - Acceptable Products

Manufacturer	Product
Dow Corning Canada Inc.	Dow CWS
Tremco Ltd.	Spectrem 2
Substitutions	Consideration will be given to proposed substitutions

2.4 ACCESSORIES

- .1 Use joint backing to control depth of joint to recommended thickness of sealant and to

prevent three-sided adhesion.

1. Backer Rod: extruded polyolefin foam, non-gassing and have a diameter 25% larger than joint width.
 2. Bond-breaker Tape: pressure sensitive adhesive tape which will not bond to the sealant, alternately apply a wax crayon to the substrate where you do not want sealant to bond:
- .2 Void Fillers
1. Unless otherwise specified, insulation for packing into large voids and cavities shall be light weight resilient, inorganic fibrous batts, such as:

Table 3 – Acceptable Products

Manufacturer	Product
Roxul	Flexibatt Batt Insulation 07210
Owens Corning	Fiberglass Pink Friction Fit Batt
Substitutions	Consideration will be given to proposed substitutions

2. Where specified, use a single component, non-solvent based, polyurethane foam, conforming to CAN/CGSB-51.23 (latest edition), “Spray-Applied Rigid Polyurethane Cellular Plastic Thermal Insulation” such as:

Table 4 – Acceptable Products

Manufacturer	Product
Dow Chemical	Enerfoam
Adfast Corp.	Adfoam 1885-2
Substitutions	Consideration will be given to proposed substitutions

- .3 Miscellaneous
1. Use clean, white, solvent resistant cloths for solvent cleaning of surfaces prior to application of sealants. Do not use coloured cloths. Change cloths frequently as they become soiled during cleaning.

PART 3 - EXECUTION

3.1 GENERAL

- .1 Consult and follow the sealant manufacturer's written project recommendations. Notify the Consultant where sealant manufacturer's written requirements conflict with requirements of this Specification. In general, all work shall meet or exceed the more stringent requirement, as agreed with Consultant.

3.2 SURFACE PREPARATION

- .1 Remove all existing sealant to expose a sound substrate, without damaging adjacent finishes or causing damage to the substrate.
 - .1 For Concrete and Masonry Surfaces, remove dust, paint, loose mortar and other foreign matter by brushing and vacuuming or blowing air.
 - .2 For Ferrous & Metal Surfaces, remove dust, silt, scale, oxidation and coating by scraping, wire brushing or grinding.
 - .3 For Plastic Surfaces, such as PVC, remove all dust, plastic surface residue and other foreign matter and lightly abrade surface by light sanding with sand paper.
- .2 Clean all surfaces to receive sealant by wiping with a clean cloth saturated with recommended cleaning solvent and by following immediately with another clean cloth to wipe the surface dry (2 rag method). Clean only as much area as can be sealed in one 1 hour. If cleaned areas are exposed to rain or contaminants (dirt, dust, etc.), the surface must be cleaned again.

3.3 INSTALLATION

- .1 Priming
 - .1 If recommended, prime surfaces to receive sealants as per the sealant manufacturer's written specifications. Follow the sealant manufacturer's written instructions for application and cure time.
 - .2 Take sufficient precautions to prevent staining of adjacent surfaces. Do not apply primer to the backer rod/bond breaker. Where necessary to protect adjacent surfaces, mask surfaces with suitable tape prior to primer and/or sealant installation.
 - .3 If primed areas are exposed to rain or contaminants (dirt, dust, etc.), the surface must be cleaned and re-primed.
 - .4 Protect the surfaces that do not require primer. If primer is installed accidentally on surfaces other than the one specified, it should be removed immediately with a clean cloth dampened with the manufacturer's recommended cleaner.
- .2 Joint Backing
 - .1 At large open cavities, fill cavity with approved void filler prior to installation of backer rod.

- .2 Install backer rod or apply bond breaker tape prior to sealant installation.
 - .3 Tightly install backer rod without stretching, twisting, braiding or puncturing its outer skin.
 - .4 Use an approved installation tool that is blunt surfaced and developed to accurately set backer rod at required depth to achieve recommended sealant profile.
 - .5 Joint backing must be thoroughly dry. Do not install more joint backing/bond breaker tape than can be sealed in one working day.
- .2 Sealant Bead Profile
- .1 Unless otherwise specified by the Manufacturer's written instructions or Drawings, provide sealant with a profile that meets the following criteria:
 1. Width to Depth Ratio: 2:1 profile (sealant depth that is $\frac{1}{2}$ the joint width) where possible, within limits for joint width and depth specified by Manufacturer's written instructions and below.
 2. Depth: Minimum 6mm and maximum 12mm. Adjust sealant depth as required to adhere to minimum and maximum depth tolerances and to provide a 2:1 width to depth profile.
 3. Minimum Joint Width: 10mm, unless otherwise approved by Consultant. Identify any joint widths less than 10mm to Consultant for direction.
 4. Maximum Joint Width: For joints wider than 19mm closure strips, matching adjacent finishes, shall be used to reduce the joint size prior to sealant application. Follow Manufacturer's written instructions for maximum joint width and application methods.
- .3 Sealant Application
- .1 Apply sealant using equipment in accordance with manufacturer's written instructions.
 - .2 Immediately after application, tool sealant to ensure firm, full contact with joint faces. Neatly tool surfaces to a slight concave profile. Avoid pulling sealant out of the joint by frequent cleaning of tooling instrument. Surface of sealant to be smooth, free from ridges, wrinkles, sags, air pockets and embedded impurities.
 - .3 Joining Silicone to Urethane Sealants: Place silicone and urethane sealants in contact with each other by wet to wet (prior to skinning over) and/or wet silicone to dry urethane application methods, as per manufacturer's written instructions and confirmed to be acceptable by an on-site mock-up. Sealants detailing must provide a watertight seal, including lapping to provide proper shedding of water flowing with gravity. Where initial lengths of sealant are required to assure appropriate lap, apply silicone first.
- .4 Cleaning
- .1 Remove sealant smears and droppings on completion of sealant installation in affected areas.

- .2 For non-porous surfaces (i.e. metal and glass), immediately remove all excess sealant adjacent to joint as work progresses with a cleaning solvent per Manufacturer's written instructions.
- .3 For porous surfaces, allow sealant to develop initial cure, then remove by abrasion or other mechanical means. Caution should be exercised to maintain original surface integrity.
- .4 Remove masking tape immediately after tooling of joints.
- .5 Cleaning solutions and methods per Manufacturer's written instructions.

END OF SECTION 07 92 00

DIVISION 08 – DOORS AND WINDOWS

SECTION 08 11 00 –METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This section governs removal of existing doors/frames and supply and installation of new hollow metal doors and pressed steel frames.

1.2 RELATED WORK

- .1 Scope of Work.....Section 01 00 00
- .2 General WorkSection 01 00 10
- .3 Interior Door Schedules.....Section 08 06 11
- .4 Door Hardware.....Section 08 00 10
- .5 PaintingSection 09 91 20

1.3 REQUIREMENTS FOR REGULATORY AGENCIES

- .1 Install fire labelled metal door and frame products in accordance with NFPA-80, current edition, unless specified otherwise.
- .2 Supply and install metal doors, frames and associated hardware to comply with applicable provisions of current Ontario Building Code.

1.4 REFERENCE STANDARDS

- .1 Conform to the latest edition of the following:
 - 1. Canadian Steel Door Manufacturers Association (CSDMA), Steel Door and Frame Products Specifications, 2009
 - 2. CSDMA, Selection and Usage Guide for Steel Doors and Frames, 2009.
 - 3. National Fire Protection Association (NFPA), NFPA-80, 2016 - Fire Doors and Windows.
 - 4. ASTM C1248, "Standard Test Method for Staining of Porous Substrate by Joint Sealants"
 - 5. ANSI A115.IG-1994 - Guide for Doors and Hardware Installation.
 - 6. CAN/ULC-S105 (2016) - Standard Specification for Fire Door Frames Meeting the Performance Required by CAN/ULC-S104.
 - 7. CAN/CGSB 12.1 M90 – Tempered or Laminated Safety Glass.

8. CAN/CGSB-12.3-M91 – Flat, Clear Float Glass.
9. CAN/CGSB-12.4-M91 – Heat Absorbing Glass.
10. CAN/CGSB-12.9-M91 – Spandrel Glass.
11. CSA W59-13 - Welded Steel Construction (Metal Arc Welding).
12. ISO 9001:2015 - Quality Management Systems – Requirements.

1.5 DESIGN REQUIREMENTS

- .1 All fire rated doors and frames shall have ULC appropriate label attached.
- .2 Manufacturing and fabrication shall be as specified, and not less than standards and tolerances set by the Canadian Steel Door and Frame Manufacturers Association
- .3 Door and frame manufacturer shall be a member of the Canadian Steel Door and Frame Manufacturers Association.
- .4 Where required, fire rated doors shall meet temperature rise requirements of the Ontario Building Code.
- .5 Door size tolerances shall be as follows:
 1. Overall sizes: Plus or minus 0.8mm.
 2. Thickness: Plus or minus 1.6mm.
 3. Squareness: Diagonal difference maximum 3mm.
 4. Bow, Twist or Warp: Maximum 3mm.
- .6 Door and Frame Sizes
 1. Door sizes indicated on door schedules are frame rebate width and height dimensions. Doors shall be sized to suit frame rebate sizes.
- .7 Head, jamb and floor or threshold clearance for doors shall be as follows:
 1. Jamb and Head: 3mm.
 2. Bottom: 6mm from finish unless indicated otherwise.
 3. Lock Edges: Bevelled 3mm in 50mm.
 4. Between Meeting Edges of Pairs of Doors: 3mm.

1.6 QUALITY ASSURANCE

- .1 Perform work in accordance with requirements by a member of the Canadian Steel Door Manufacturers' Association (CSDMA).
- .2 Label and list fire-rated doors and frames by an organization accredited by the Standards Council of Canada in conformance with CAN/ULC-S104-15 and CAN/ULC-S105-16 for ratings specified.

- .3 Unless otherwise specified, meet the requirements of the “Canadian Manufacturing Specification for Steel Doors and Frames” published by the Canadian Steel Door Manufacturer’s Association (CSDMA).
- .4 Installation of the glass and glazing by the supplier for the new metal doors shall be conducted only by individuals specifically trained and qualified for this work.
- .5 Provide one experienced foreperson in charge of the Work and present on site at all times for the duration of the project.

1.7 DELIVERY STORAGE AND HANDLING

- .1 Deliver all hollow metal doors and pressed steel frames to the site fully protected and with adequate location and installation details. Deliver to the site in accordance with approved construction schedule.
- .2 Provide packaging such as cardboard or other containers, separators, banding and paper wrappings as required to completely protect all metal doors and frames during transportation and storage.
- .3 Store all hollow metal work in a dry location; off and away from ground contact; protect by suitable means required for installation; brace and stack to prevent racking, bending, twisting, or any other damage.
- .4 Leave spreaders in place until frames are braced or anchored in final locations.
- .5 In the event of damage, immediately make all repairs and replacements necessary to the approval of the Consultant and at no additional cost to the Owner.
- .6 Contractor will be allowed to store equipment and materials on site at school designated areas only and only with the written approval of the PDSB. Cost of such storage on site shall be costed in the bid documents. Security and/or loss of equipment and materials on site shall be with the Contractor. The PDSB will not be responsible for claims due to loss or damage on school property.

1.8 QUALIFICATIONS

- .1 Use only installers with 3 years minimum experience in work similar to work of this Section.

1.9 MOCK-UPS

- .1 Minimum of one mock-up of each door type, assembly is to include all relevant perimeter seals in all the openings. Mock up to include roof, soffit, and wall interfaces (if applicable).
- .2 Construct a mock-up on site of a typical door for review by Consultant, prior to commencement of installation work.

1.10 INSPECTIONS AND TESTING

- .1 Consultant may visit door manufacturer's facility during manufacturing to examine assembly and materials.

1.11 PROJECT CONDITIONS

- .1 Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.12 WARRANTY

- .1 Supply and installation of all products including, but not limited to, metal door and frame products shall be warranted from defects in workmanship and materials for a period of two (2) years from date of completion of installation. Also agree to make good defects which become evident during warranty period at no cost to the Owner, within 10 business days of the date of report. Without restricting the generality of the warranty, defects shall include air and/or water leaking, deformation of members, breaking of glass due to thermal or structural movement, discoloration of finishes and failure of sealant beads.
- .2 All metal door and frame products shall be warranted against rust perforation for a period of ten (10) 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 products shall be warranted for a period of ten (10) 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.
- .4 Warrant that failing doors, frames and/or any component(s) thereof shall be replaced or repaired within 10 business days, as may be determined by the Consultant without any further cost to the owner.
- .5 The supplier is to provide a written warranty from the insulating glass manufacturer which includes all labour and materials to correct any defects in materials for a period of ten (10) years.
- .6 Supply all materials, labour, tools and equipment to repair and/or replace any work judged defective by the Consultant of Record, and any other work damaged due to faulty or defective, at no additional cost during the term of the warranty.

PART 2 - PRODUCTS

2.1 PRESSED STEEL DOORS FRAMES

- .1 Door frames shall be fabricated from minimum 16 gauge thick steel. Fire rated door frames shall be of thicker gauge if required by ULC rating as scheduled.

- .2 Door frames shall have zinc coating finish ZF075 to ASTM 525 (Wiped Coat); or having Dofasco's Satincote or Stelco's Colorbond zinc coating before fabrication.
- .3 Pressed steel frames in fire rated walls shall be constructed to ULC approval and shall have fire rating label attached. Rating to be as noted in Door Schedules.
- .4 Door frames shall have mitred and welded corners, ground filled and dressed smooth.
- .5 Frame profiles shall as detailed for jamb depths, with 50mm face, 12.7mm returns and 16mm stops.
- .6 Provide interior door frames with 3 Glyn-Johnson GJ64 rubber bumper mutes to strike jamb stop of single doors.
- .7 Provide loose adjustable base anchors for anchorage to floor slabs

2.2 HOLLOW METAL DOORS

- .1 General
 - 1. Hollow metal doors shall be fabricated from minimum 16 gauge steel
 - 2. Hollow metal doors shall have zinc coating finish, ZF075 to ASTM 525, (Wiped Coat) or having Dofasco's Satincote or Stelco's Colorbond zinc coating;
 - 3. Doors shall be 45mm thick, full flush face, edge seam only.
 - 4. Door shall have seamless faces and continuous vertical mechanical interlocking joints at lock and hinge edges with visible edge seams.
 - 5. Top and bottom of doors shall be closed with recessed channels or have flush end closure as per manufacturer's standards.
 - 6. Glazing stops for lights in hollow metal doors shall be 20 gauge zinc coated steel formed, screw-on stops.
- .2 Interior
 - 1. Core material to interior doors shall be resin impregnated kraft paper formed into a honeycomb core reinforcing to support door every 25mm.
- .3 Fire Rated
 - 1. Core materials to fire rated doors to be manufacturer's standard for fire rated ULC approved fire doors.
 - 2. Fire rated hollow metal doors shall be constructed to ULC approval and shall have required fire rating label attached.

2.3 ANCHORS

- .1 Floor anchors: Anchors shall be a minimum of 14 gauge steel.
- .2 Wall Anchors: Shall be "existing wall" type anchors.

2.4 HARDWARE

- .1 All hardware is to be as per the included hardware schedules.
- .2 Hardware Reinforcing Plates: Hard tempered steel, minimum thickness as follows:
 1. Hinge and pivot reinforcements: 10 gauge.
 2. Strike reinforcements: 12 gauge.
 3. Flush bolt reinforcements: 12 gauge.
 4. Closer reinforcements: 12 gauge.
 5. Reinforcements for lock face, flush bolts, concealed holders, concealed or surface mounted closers: 12 gauge.

2.5 SEALANTS

- .1 Refer to Section 07 92 00 – Elastomeric Joint Sealants.

2.6 PAINT

- .1 Refer to Section 09 91 20 – Painting Steel.

PART 3 - FABRICATION AND MANUFACTURE

- .1 Fabricate all hollow metal work in accordance with profiles on reviewed shop drawings. Flat work to be levelled and straight with surfaces smooth and true.
- .2 Edges, angles and corners to be square, clean and smooth. Curved work to be made to true radii.
- .3 After welding, units to be square and true, free from distortion, such as wracking or twisting. Maximum twisting to be limited to 3mm measured on diagonal of door.
- .4 Fabricate frames in sections as large as practicable to minimise field jointing.
- .5 Mitre all corners of frames, reinforce and fully weld in accordance with manufacturer's standard.
- .6 Glazing stops to be mitred at corners and drilled for O.H. countersunk screws. Corners to be sanded smooth with no sharp edges.
- .7 All pressed steel door frames shall be provided with steel spreader temporarily attached to the feet of both jambs to serve as a brace during shipping and handling.
- .8 Clean and chemically treat metal to provide maximum paint adhesion

- .9 Hardware Preparation - Door Reinforcement: Doors shall be mortised, reinforced, drilled and tapped at the factory for fully templated hardware in conformance with the final reviewed hardware schedule and templates provided by the hardware supplier. Where surface mounted hardware is to be applied doors shall have reinforcing plates only with drilling and tapping done on site.

PART 4 - EXECUTION

4.1 INSPECTION

- .1 Inspect Work of other sections upon which the Work of this section depends. Proceed only after deficiencies, if any, in Work of other sections have been corrected.
- .2 Ensure all anchor and setting or installing assemblies or components supplied by this trade for installation by others are properly located and correctly set in place.

4.2 PREPARATION

- .1 Do not proceed with work if weather at time of installation, or if immediate forecast is for weather which may result in damage to exposed wall elements, interior finishes or furnishings.
- .2 Obtain all dimensions affecting the work of this section on the job site.
- .3 Provide data, dimensions and components, anchors and assemblies to be installed by others in proper time for installation.

4.3 REMOVAL OF EXISTING DOORS

- .1 Remove and dispose of existing doors and frames (door frames and door slabs), including all associated sealants. Take all precautions required to prevent debris falling below.
- .2 Place all components (steel, glass, etc.) from door removal into separate containers on site and delivered to a recognized and approved recycling facility.
- .3 Take care to limit damage to interior finishes and exterior cladding. Repair all damage to sound interior finishes and exterior cladding at no cost to Owner.

4.4 INSTALLATION AND SECUREMENT

- .1 Install doors as per approved shop drawings.
- .2 Floor anchors: Shall be securely welded inside each jamb, with 2 holes provided at each jamb for floor anchorage.
- .3 Minimum number of wall anchors provided on each jamb shall be as follows:
 1. Frames up to 7'-0" height: 3 anchors minimum.

2. Frames over 7'-0" height: 4 anchors minimum and not less than 1 per each 24" or portion thereof.
 - .4 Install sealants in accordance with Section 07 92 00.
 - .5 Thresholds: Shall be filled with fast-setting hydraulic cement or grout.
- 4.5 PERIMETER INSULATION, SEALANTS, AND TRIM
- .1 Completely fill void around frame perimeters with spray foam. Limit quantity of foam as recommended by product manufacturer to provide sufficient room for expansion.
 - .2 Cut away foam exuding from joints prior to applying sealants.
 - .3 Install interior and exterior sealants in accordance with Section 07 92 00 and project drawings. Cap off large (greater than 19mm) joints and gaps between door frame and rough opening with new prefinished trim as required.
- 4.6 CLEANING AND ADJUSTMENT
- .1 Remove protective elements and labels from glass and frames, and thoroughly clean all steel and glass surfaces with a solution of mild domestic detergent in warm water. Take care in removing dirt from corners. Dry surfaces using soft cloths.

END OF SECTION 08 11 00

DIVISION 08 – DOORS AND WINDOWS

SECTION 08 80 00 – DOOR GLAZING

PART 1 - GENERAL

1.1 DESCRIPTION

1. This section specifies the fabrication, supply and installation of door glazing.

1.2 DESIGN AND PERFORMANCE REQUIREMENTS

1. Design glazing to withstand, without any detrimental effects to appearance and performance, wind loads and temperature range expected in accordance with local Codes.
2. Select glass pane thickness and width of spacer to provide overall, nominal IGU thickness of 25mm (1").
3. Size glazing unit to provide a minimum edge clearance between edge of unit and window frame in accordance with IGMA recommendations.

1.3 REFERENCE STANDARDS

1. Comply with requirements of the following documents, latest edition.
 1. Glass Association of North America (GANA), "GANA Glazing Manual"
 2. Insulating Glass Manufacturer Alliance (IGMA), "Glazing Recommendations for Sealed Insulating Glass Units"
 3. Standards Council of Canada (SCC):
 1. CAN/CGSB-12.1, "Tempered or Laminated Safety Glass"
 2. CAN/CGSB-12.3, "Flat, Clear Float Glass"
 3. CAN/CGSB-12.8, "Insulating Glass Units"
 4. CAN/CGSB-12.20-M, "Structural Design of Glass for Buildings"
 5. CAN/CGSB-12.2, "Flat, Clear Sheet Glass"
 6. CAN/CGSB-12.4, "Heat Absorbing Glass"

1.4 QUALITY ASSURANCE

- .1 Provide IGUs manufactured by an Insulating Glass Manufacturer Alliance (IGMA) certified member.
- .2 Provide notice for Consultant and/or Owner to review IGUs prior to installation.

- .3 Consultant and/or PDSB may visit the IGU manufacturer’s facilities during manufacture/fabrication of products to be installed on this project. If requested, Contractor shall arrange for access for Consultant to that manufacturer’s facility to review manufacture of products for Work.
- .4 Assembly methods and materials will be reviewed during visit to manufacturer’s facility. Ensure manufacturer makes available IGMA required daily quality control records for review by Consultant and PDSB.
- .5 Consultant will review IGUs on site. Destructive testing may be performed to confirm concealed details. Replace IGUs not manufactured in accordance with IGMA certification and as otherwise detailed in this Section at no cost to PDSB.

PART 2 - PRODUCTS

2.1 GLASS

1. Standard Glass

1. Interior Doors, Sidelights and Transoms

Location	Lite	Thickness	Type	Glass Colour	Coating
All non-fire rated doors. Refer to Door Schedule SCH-1	Single Glazed	6mm	Heat Soaked, Tempered	Clear	None

2. Fire Rated Glass

1. Fire-rated, impact safety-rated glass ceramic:

Manufacturer	Product
Technical Glass Products	FireLite Plus – Standard Grade
Vetrotech	Keralite Laminated Impact Safety
Alternates	Consideration will be given to proposed alternates

2. Fire-rated Single Glazed Units – Interior Doors

Location	Lite	Thickness	Type	Glass Colour	Coating
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Fire Rated Interior Doors. See Interior Door Schedule (SCH-1)	Single Glazed	7.9mm	Fire-rated, impact safety-rated glass ceramic	Clear	None
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2.2 INSULATING GLASS UNITS

1. Acceptable IGU manufacturers include:
 1. Trulite
 2. Prelco
 3. Cardinal
 4. SAAND
 5. Oldcastle
2. Identify IGUs as required by the IGMA Certification Program with the IGMA trademark, company name, location of production facility, and year of manufacture.
3. Perimeter Sealant System
 1. Primary Seal: polyisobutylene (PIB)
 2. Secondary Seal: two component structural polysulphide sealant; two component structural silicone seals (such as Dow 983 by Dow Corning Corporation or IGS 3723 by GE Silicones) can be used where approved by Consultant.
4. Spacer and Desiccant Systems
 1. Spacer Products – Thin Wall Stainless Steel:

Manufacturer	Product
RollTech	Chromatech Plus
Helima	Nirotec
Cardinal	Endur IG
Alternates	Consideration will be given to proposed alternates

2. Size the spacer system as required to be compatible with framing system and engineered glass thicknesses. Unless otherwise specified, nominal air space width between inboard and outboard pane should be 12±1mm.
3. Provide a continuous spacer, fabricated with bent corners and fused butt joint(s). Assembly with connectors such as corner keys will only be considered if approved by

IGMA. Written approval from Consultant must be obtained before proceeding with connectors.

4. Provide a spacer system which is suitable and tested for use in conjunction with argon gas.
 5. Design desiccant volume as required to avoid inward deflection of glass and/or spacer and sealant system due to excessive adsorption of gasses other than water vapour.
5. IGU Inert Gas Fill
1. Use argon gas, minimum 90% concentration, to meet minimum requirement of CAN/CGBS-12.8, "Insulating Glass Units".

2.3 COATINGS

1. Low-E Coating
 1. Sputtered type, such as:

Manufacturer	Product
Vitro Architectural Glass	Solarban 70XL
Cardinal	LoE ² -366
AGC Glass	Energy Select 28
Alternates	Consideration will be given to proposed alternates

2.4 GLAZING COMPONENTS

1. Glazing Stops
 1. Ensure glazing stops do not extend beneath IGU edges (such as shovel foot type stop).
 2. Heel bead shall not impede the removal of glazing stops. Consultant will randomly inspect this throughout the entire project.
2. Glazing Tapes and Gaskets
 1. For wet seal between glass and framing, use a black preformed, butyl tape incorporating continuous EPDM cord shim (minimum 3mm (1/8") diameter cord), mounted on a paper backer, such as:

Manufacturer	Product

Tremco	Polyshim II
Alternates	Consideration will be given to proposed alternates

2. For dry seal between glass and frame or stop, use EPDM or silicone extruded gasket. Do not use PVC or santoprene gaskets in compression glazing applications.
3. Select thickness of glazing tapes and gaskets based on manufacturer’s written instructions to provide recommended compression necessary to ensure water tight seal of window assembly.

3. Glazing Sealants

1. For filling recesses in glazing tape and for heel beads, Type S, Grade NS, Class 50, moisture curing silicone sealant, conforming to ASTM C 920:

Manufacturer	Product
Dow Corning Canada Inc.	Dow 795
General Electric	Silpruf
Tremco Ltd.	Spectrem 2

2. For corner toe beads, use a general purpose butyl sealant, conforming to ASTM C1311:

Manufacturer	Product
Tremco Ltd.	Tremco Butyl
Tremco Ltd.	Tremco Dymonic
Or approved alternate	

3. For sealing butt joint at the sill/jamb corner of the interior stop, use Type S, Grade NS, fast-skinning, medium modulus silicone sealant conforming to ASTM C 920. Sealant colour to match interior stops.

Manufacturer	Product
Tremco Ltd.	Tremsil 600
Or approved alternate	

4. Setting Blocks

1. Use neoprene, EPDM or silicone rubber setting blocks with a Shore A Durometer hardness of 85±5. If insulated glass units have silicone secondary seals, use silicone setting blocks or approved equivalent. Do not use PVC or other types of setting blocks.
2. Use setting blocks with a minimum thickness of 6mm (1/4"). Ensure setting blocks are wide enough to fully support full glass width (both inboard and outboard panes for IGUs). Unless otherwise stated, provide minimum setting block length of 25mm per square metre for larger units, but not less than 50mm.
3. Follow recommendations listed in Section 5 of IGMA “Glazing Recommendations for Sealed Insulating Glass Units” regarding setting block size, thickness, etc.

PART 3 - EXECUTION

3.1 TEMPERING

1. Perform tempering using horizontal tongue-free method.

3.2 ASSEMBLY OF INSULATING GLASS UNITS (IGUs)

1. Fill spacer cavities with desiccant in accordance with desiccant manufacturer's written instructions and immediately assemble spacer frame.
2. If corner keys are used, seal each corner key individually with PIB by one of the following methods:
 1. Wrapping corner key legs with extruded PIB ribbon prior to insertion of key into spacer;
 2. Injection of PIB after insertion of key into spacer; or
 3. Coating exposed portion of key with PIB after insertion into spacer.
3. Ensure bond lines on spacer and glass are free of debris, fingerprints or other substances which may adversely affect the bond.
4. If required, edge delete coatings as per manufacturer's written instructions and IGMA certification.
5. After cleaning, place spacer frame with all sides parallel to edges of glass. Ensure all sides of frame are equal dimension from glass edges.
6. Apply sufficient PIB around entire spacer frame assembly perimeter on both sides of the spacer to achieve complete PIB wet out onto glass surfaces.
7. Once assembled and compressed, verify that:
 1. PIB is continuous and in contact with glass and spacer around entire perimeter of the assembly (on all glass surfaces inside the unit).
 2. Post-fabrication width of the PIB is at least 4 ± 1 mm as measured from spacer top to bottom.
 3. PIB does not extend past opening sight line by more than 1mm.
 4. Spacer is located such that spacer top portion (visible through glass) is outside sight line of glazed assembly.
8. Proceed with gas fill operation. Once filling procedures are complete, mechanically close injection port and cover/seal with a layer of PIB.
9. Apply and tool structural secondary sealant around full IGU perimeter per sealant manufacturer's written instructions. Verify that:
 1. Sealant is installed in a continuous operation around entire assembly perimeter and to full cavity depth created by metal spacer in between glass lites.

2. Once cured, sealant is minimum 4 ± 1 mm thick as measured from glass edges.
10. Store IGUs as per IGMA recommendations. Do not store IGUs shall in direct sunlight or outside during curing period. Follow sealant manufacturer's written instructions for curing prior to shipping to site. Ensure structural secondary sealant is thoroughly cured before shipment to site.

3.3 SITE EXAMINATION

1. Verify all glass is correctly sized for the intended openings and glass edges are free from nicks and other imperfections conducive to breakage.
2. Verify minimum required face and edge clearances will be achieved.
3. Notify Consultant of conditions which prevent proper installation.

3.4 IGU INSTALLATION

1. Preparation:
 1. Verify surfaces to receive glazing are undamaged, free of obstructions and ready for preparation.
 2. Remove all protective coatings from frames and glass.
 3. Verify surfaces to receive glazing tape, including glass edges, are prepared in accordance with manufacturer's written instructions. Do not clean surfaces that cannot be glazed within two hours.
2. Glazing Tape Application:
 1. Apply tape flush to outside edge of fixed stop. Butt tape at corners of openings (rather than overlapping or bending around corners), offsetting tape joints from window frame joints. Do not stretch tape during installation. Trim or otherwise adjust as needed to accommodate frame joint seals.
 2. Seal all joints in glazing tape using compatible sealant and install 50mm long corner toe beads on either side of the joint.
 3. Leave release paper on glazing tape until just before glazing.
3. Setting Block Placement:
 1. Place each setting block at quarter points, but no closer than 150mm from glass corners.
4. Glass Placement
 1. Clean glass face with a clean white cloth saturated with solvent using the 2-rag method.
 2. Install glass unit centred in frame opening and resting on both setting blocks. Maintain minimum edge clearance of 3mm (1/8"). Ensure full contact of glass on setting blocks.

3. Press glass firmly against glazing tape. Take care to avoid displacing glazing tape during glass installation.
4. Locate glass within opening to provide minimum face clearances as recommended by IGMA.
5. Install interior glazing stops immediately following glass placement. Tightly fit butt joints between stops. During installation, support any intermediate horizontal framing members against the downward force of hammering during stop installation.
6. Verify glazing tape is compressed to design face clearance include in manufacturer's written instructions.
7. Fill depressions in glazing tape at sill with silicone sealant.

3.5 CLEANING AND ADJUSTMENT

1. Remove protective elements and labels from glass and thoroughly clean frame and glass surfaces with solution of mild domestic detergent in warm water. Take care in removing dirt from corners. Wipe surfaces dry using soft cloths. Glass to be cleaned according to GANA Informational Bulletin GAA 01-0300, Proper Procedures for Cleaning Architectural Glass Products.

END OF SECTION 08 80 00

DIVISION 08 — DOORS AND WINDOWS
SECTION 08 06 11 – INTERIOR DOOR SCHEDULE

SCH-1
INTERIOR DOOR SCHEDULE

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension-Height (mm)	Door Approximate Dimension-Width (mm)	Comments
1	1st	S	Staff Room 117	D	-	-	2105	905	Door slab replacement only, clean and repaint frame.
2	1st	S	Room 117A	D	-	-	2130	910	Door slab replacement only, clean and repaint frame.
3	1st	S	Women Washroom	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
4	1st	S	Men Washroom	A	-	-	2125	905	Door slab replacement only, clean and repaint frame.
5	1st	Triple	Gymnasium	C-T	F1	-	2165	2950	Door and frame replacement. The door slab width dimensions are to be approximate 2x935mm+1x905mm wide.
6	1st	S	Room 117A	D	-	-	2110	910	Bi-level door slab replacement only with new door slab type D, clean and repaint frame. Prepare the frame for new hardware (lockset) standard installation height.
7	1st	D	Store	A-D	-	-	2055	2x910	Door slabs replacement only, clean and repaint frame (frame without mullion).
8	1st	D	Gymnasium	B-D	-	-	2055	2x905	Door slabs replacement only, clean and repaint frame (frame with fixed mullion).
9	1st	S	Boy Change Room	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
10	1st	D	Gymnasium	B-D	-	-	2115	2x915	Door slabs replacement only, clean and repaint frame (frame with fixed mullion).
11	1st	D	GYM ST 122B	A-D	-	-	2110	2x910	Door slabs replacement only, clean and repaint frame (frame without mullion).
12	1st	S	Guid 120D	D	-	-	2120	910	Door slab replacement only, clean and repaint frame.
13	1st	S	Genral office 120	D	-	-	2115	905	Door slabs replacement only, clean and repaint frame.
14	1st	S	Guid 120E	D	-	-	2120	905	Door slab replacement only, clean and repaint frame.
15	1st	S	WK. Room 120F	D	-	-	2125	905	Door slab replacement only, clean and repaint frame.
16	1st	S	Health Room 120G	D	-	-	2125	905	Door slab replacement only, clean and repaint frame.
17	1st	S	Genral office 120	B	-	-	2130	910	Door slab replacement only, clean and repaint frame.
18	1st	S	Principle 120A	D	-	-	2110	910	Door slab replacement only, clean and repaint frame.
19	1st	S	V PR 120B	D	-	-	2110	905	Door slab replacement only, clean and repaint frame.
20	1sr	S	V PR-Inside	D	-	-	2110	855	Door slab replacement only, clean and repaint frame.

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension-Height (mm)	Door Approximate Dimension-Width (mm)	Comments
22	1st	S	Photocopy Room- Inside	D	-	-	2110	850	Door slab replacement only, clean and repaint frame.
23	1st	D	Stage 122A	D-D	-	-	2110	2x910	Door slab replacement only, clean and repaint frame (frame is without mullion).
24	1st	S	Vestibule 125	D	-	-	2125	905	Door slab replacement only, clean and repaint frame..
25	1st	S	Conference Room 126	D	-	-	2120	905	Door slab replacement only, clean and repaint frame.
27	1st	S	Washroom 126 B	A	-	-	2125	755	Door slab replacement only, clean and repaint frame.
28	1st	S	Genral office 120	D	-	-	2105	905	Door slab replacement only, clean and repaint frame.
29	1st	D	Library 121	B-D	-	-	2129	2x910	Door slabs replacement only, clean and repaint frame (frame is without mullion).
30	1st	D	Hallway	B-D	F2	45 minutes	2590	2580	Replace and install new frame and door slabs. Each door slab is to be approximate 2120 mm heightx910 mm width. Mag locks (hold open) to be installed by PDSB forces.
31	1st	S	Academic storge 127	-	-	-	-	-	Clean and repaint door slab and frame only.
32	1st	S	Boiler/Mechanica I Room 128	A	-	45 minutes	2110	910	Door slab replacement only, clean and repaint frame.
33	1st	S	Classroom 101A	C	-	-	2110	910	Door slab replacement only, clean and repaint frame.
34	1st	S	Muisc Room 102	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
35	1st	S	Stage 122A	D	-	-	2120	1055	Door slab replacement only, clean and repaint frame.
36	1st	S	Stage 122A	D	-	-	2130	910	Door slab replacement only, clean and repaint frame.
37	1st	S	Classroom 101B	C	-	-	2105	910	Door slab replacement only, clean and repaint frame.
38	1st	S	Classroom 103	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
39	1st	S	ESL 114	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
40	1st	D	Hallway	B-D	F3	45 minutes	2850	2850	Replace and install new frame and door slabs. Each door slab is to be approximate 2105mm heightx905mm width. Mag locks (hold open) to be installed by PDSB forces.
41	1st	S	Girls Washroom 138	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
42	1st	S	Female Instructor 124A	D	-	-	2130	910	Door slab replacement only, clean and repaint frame.
43	1st	S	Girls Change Room 124	D	-	-	2120	905	Door slab replacement only, clean and repaint frame.

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension-Height (mm)	Door Approximate Dimension-Width (mm)	Comments
44	1st	S	Washroom 124B	A	-	-	2120	910	Door slab replacement only, clean and repaint frame.
45	1st	S	Boys Washroom 137	A	-	-	2115	905	Door slab replacement only, clean and repaint frame.
46	1st	S	Mechanical 136	A	-	-	2110	900	Door slab replacement only, clean and repaint frame.
47	1st	S	Classroom 112	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
48	1st	S	Boys Change Room 123	D	-	-	2120	910	Door slab replacement only, clean and repaint frame.
49	1st	S	Instructor 123A	D	-	-	2120	910	Door slab replacement only, clean and repaint frame.
50	1st	S	Washroom 123B	A	-	-	2105	855	Door slab replacement only, clean and repaint frame.
52	1st	S	Gust 135	D	-	-	2060	905	Door slab replacement only, clean and repaint frame.
53	1st	S	Seminar 134	C	-	-	2055	905	Door slab replacement only, clean and repaint frame.
54	1st	S	Muisic Room 115	C	-	-	2055	905	Door slab replacement only, clean and repaint frame.
55	1st	D	Classroom 112	C-D	-	-	2115	2x910	Door slab replacement only, clean and repaint frame.
56	1st	S	Store 112A	A	-	-	2110	910	Door slab replacement only, clean and repaint frame.
57	1st	S	Classroom 113B	C	-	-	2055	905	Door slab replacement only, clean and repaint frame.
58	1st	S	Classroom 113A	C	-	-	2060	905	Door slab replacement only, clean and repaint frame.
59	1st	S	Boys Washroom 132	A	-	-	2060	900	Door slab replacement only, clean and repaint frame.
60	1st	S	Girls Washroom 131	A	-	-	2065	900	Door slab replacement only, clean and repaint frame.
61	1st	S	Preparation Room 133	D	-	-	2060	905	Existing old metal door slab with wired glass lite is to be replaced.
62	1st	S	Lunch Room 108	D	-	-	2065	905	Door slab replacement only, clean and repaint frame.
63	1st	S	Classroom 111B	C	-	-	2060	905	Door slab replacement only, clean and repaint frame.
64	1st	S	Classroom 111A	C	-	-	2060	905	Door slab replacement only, clean and repaint frame.
65	1st	S	Lunch Room 108	D	-	-	2065	905	Door slab replacement only, clean and repaint frame.

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension-Height (mm)	Door Approximate Dimension-Width (mm)	Comments
66	1st	D	Hallway	B-D1	F4	45 minutes	2400	2610	Replace and install new frame and door slabs. Each door slab is to be approximate 2115mm heightx905 mm width with opposite swing direction and requires a frame with fixed mullion. Mag locks (hold open) to be installed by PDSB forces.
67	1st	S	ART Room 109	C	-	-	2060	910	Door slab replacement only, clean and repaint frame.
68	1st	S	Washroom 130	A	-	-	2075	910	Door slab replacement only, clean and repaint frame.
69	1st	S	Science 107	C	-	90 minutes	2060	900	Door slab replacement only, clean and repaint frame.
70	1st	S	Store 107A	A	-	-	2050	910	Door slab replacement only, clean and repaint frame.
71	1st	S	Classroom 106	C	-	-	2115	910	Existing metal door slab with wired glass lite is to be replaced.
72	1st	S	Classroom 105	C	-	-	2115	905	Door slab replacement only, clean and repaint frame.
73	1st	S	Classroom 104	C	-	-	2110	910	Door slab replacement only, clean and repaint frame.
74	1st	S	Custodian 129	D	-	-	2110	910	Door slab replacement only, clean and repaint frame.
75	1st	S	Electrical 129A	A	-	-	2110	910	Door slab replacement only, clean and repaint frame.
76	2nd	D	Stair	B-D	F5	45 minutes	2600	1930	Replace and install new frame and door slabs. Each door slab is to be approximate 2135mm heightx910mm width. Mag locks (hold open) to be installed by PDSB forces.
77	2nd	S	Academic Storage 215	A	-	-	2120	910	Door slab replacement only, clean and repaint frame.
78	2nd	S	Mech 215A	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
79	2nd	S	Women Washroom 214	A	-	-	2125	910	Door slab replacement only, clean and repaint frame.
80	2nd	S	Men Washroom 213	A	-	-	2120	905	Door slab replacement only, clean and repaint frame.
81	2nd	S	Boys Washroom 212	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
82	2nd	S	Girls Washroom 211	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
83	2nd	S	Classroom 201	C	-	-	2125	910	Door slab replacement only, clean and repaint frame.
84	2nd	S	Classroom 203A	C	-	-	2100	910	Door slab replacement only, clean and repaint frame.
85	2nd	S	Classroom 202	C	-	-	2130	910	Door slab replacement only, clean and repaint frame.
86	2nd	S	Academic Storage 210	A	-	-	2120	910	Door slab replacement only, clean and repaint frame.

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension-Height (mm)	Door Approximate Dimension-Width (mm)	Comments
87	2nd	S	Classroom 203B	C	-	-	2115	915	Door slab replacement only, clean and repaint frame.
88	2nd	S	Classroom 205	C	-	-	2135	910	Door slab replacement only, clean and repaint frame.
89	2nd	S	ART Room 206	C	-	-	2120	910	Door slab replacement only, clean and repaint frame.
90	2nd	S	Store 206A	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
91	2nd	S	ART Room 206	C	-	-	2115	910	Door slab replacement only, clean and repaint frame.
92	2nd	S	Science Room 208	C	-	-	2125	915	Door slab replacement only, clean and repaint frame.
93	2nd	S	Science Room 208	C	-	-	2115	910	Door slab replacement only, clean and repaint frame.
94	2nd	S	Store 208A	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
95	2nd	S	Custodian Storage 209	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
96	2nd	S	Classroom 207	C	-	-	2125	910	Door slab replacement only, clean and repaint frame.
97	2nd	D	Stair	B-D	F5	45 minutes	2600	1930	Replace and install new frame and door slabs. Each door slab is to be approximate 2135mm heightx910 mm width. Mag locks (hold open) to be installed by PDSB forces.

GENERAL NOTES:

1. REMOVE ALL LISTED DOORS AND INSTALL NEW METAL DOORS UNLESS NOTED OTHERWISE.
2. REFER TO INTERIOR DOOR HARDWARE SCHEDULE FOR DOOR HINGE CONFIGURATION REQUIREMENT.
3. ALL DOOR LITES TO HAVE SINGLE PANE 6mm THICK TEMPERED GLASS UNLESS FIRE RATED OR OTHERWISE NOTED.
4. ALL DOOR OPERATORS AND BUTTONS, APHONE, AND ELECTRICAL UNITS TO BE REMOVED, STORED, AND REINSTALLED, UNLESS NOTED OTHERWISE.
5. MAG LOCKS (HOLD OPEN) TO BE INSTALLED BY PDSB FORCES.
6. ALL FRAMES NOT BEING REPLACED ARE TO BE PREPPED, PAINTED, CHECK FOR HOLES AND FILLED IF NEEDED.
7. ALL STAFF WASHROOM DOORS WITH CORE LOCK SHOULD HAVE AN INDICATOR AND BE ABLE TO UNLOCK FROM OUTSIDE DURING EMERGENCY.
8. ALL REMAINING DOORS IN THE ORIGINAL BUILDING THAT ARE NOT WITHIN THE SCOPE OF REPLACEMENT ARE TO BE REPAINTED.
9. COORDINATE REPLACEMENT OF SIGNAGE ON DOORS WITH PDSB'S VENDOR OF RECORD SIGN SUPPLIER/INSTALLER.
10. CONTRACTOR TO VERIFY QUANTITIES, DIMENSIONS, AND DOOR HANDING ON SITE, AND TO REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING. INFORMATION WITHIN THIS SCHEDULE IS NOT TO BE USED FOR FABIRCATION AND CONSTRUCTION PURPOSES.

DIVISION 09 – FINISHES

SECTION 09 91 20 – PAINTING STEEL

PART 1 - GENERAL

1.1 Description

- .1 This section specifies surface preparation and application of protective coatings to steel elements.

1.2 Work Included

- .1 Furnish all labour, materials and equipment necessary for the complete supply, surface preparation and application of paint, required to restore original finishes to a paint ready surface.
- .2 The work of this section shall include, but shall not necessarily be limited to the following:
 - .1 Prime painting and finishing of all interior exposed items and surfaces noted on the drawings and indicated in the specifications. Interior finish repairs and first coat (primer) of sills, jambs and heads around doors, windows, etc. Shall be included in the lump sum costs.
 - .2 All coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials used as prime, intermediate or finish coats.

1.3 Related Work

- .1 Scope of Work.....Section 01 00 00
- .2 General Work.....Section 01 00 10
- .3 Selective Demolition.....Section 02 41 00
- .4 Metal Doors and Frames.....Section 08 11 00

1.4 Reference Standards

- .1 Canadian General Standards Board (“CGSB”):
 1. CAN/CGSB-1.36-97, “General Purpose Interior Alkyd Varnish”.
 2. CAN/CGSB-1.38-2000, “Interior Enamel Undercoater”.
 3. CAN/CGSB-1.57-03, “Interior Alkyd Semigloss Enamel”.
 4. CAN/CGSB-1.60-97, “Interior Alkyd Gloss Enamel”

5. CAN/CGSB-1.68-M91, “Solvent Type Primer-Sealer for Interior Walls”.
6. CAN/CGSB-1.100-99, “Interior Flat Latex Paint”.
7. CAN/CGSB-1.102-M89, “Clear Alkyd Type Sealer”.
8. CAN/CGSB-1.118-95, “Interior Flat Alkyd Finish”.
9. CAN/CGSB-1.119-2000, “Interior Latex Primer-Sealer”.
10. CAN/CGSB-1.165-2004, “Cold-Curing Epoxy Primer”.
11. CAN/CGSB-1.188-2004, “Emulsion Filler for Masonry Block”.
12. CAN/CGSB-1.195-99, “Interior Latex Semigloss Paint”.
13. CAN/CGSB-1.202-03, “Interior Low Gloss Enamel”.
14. CAN/CGSB-1.209-03, “Interior Latex Low Gloss Paint”.
15. CAN/CGSB-85.100-93, “Painting”.

.2 Master Painters Institute (MPI):

1. .MPI Architectural Painting Specification Manual, for new not previously painted or finished substrates.
2. Maintenance Repainting Manual, for previously painted or finished substrates.

1.5 Environmental Conditions

- .1 Ensure that substrate temperatures during application are a minimum of +10°C and a maximum of +35°C. Do not paint when air temperature is expected to reach 0°C before paint is dry.
- .2 Do not apply coatings while the wind speed is greater than 20km/h.
- .3 Do not apply coatings while the relative humidity is greater than 80%. The substrate temperature must be at least 5°C above the dew point while painting and curing.
- .4 Do not apply coatings in direct sunlight or during rain.

1.6 Submittals

- .1 Steel Paint Manufacturer Review Letter certifying that the materials supplied, preparation and application of the paint is in accordance with the manufacturer's specifications.
- .2 All submittals shall be in accordance with Section 01 34 00 – Submittal Procedures.

- .3 Submit full records of all products used. List each product in relation to finish formula and include the following:
 1. Finish formula designation.
 2. Product type and use.
 3. MPI number.
 4. Manufacturer's product number.
 5. Colour numbers.
 6. Manufacturer's Material Safety Data Sheets (MSDS).
 7. Maximum VOC classification.
2. Submit manufacturer's application instructions for each product specified.
3. Samples:
 1. Submit duplicate 300 x 200 mm sample panels of each paint formula type colour and texture specified.
 2. Use 3 mm plate steel for finishes over metal surfaces.
4. Maintenance Data: Provide data for cleaning and maintenance of materials and finishes.
 1. At project completion submit one 4-litre can of each type and colour of finish coating from same production run (batch mix) used in unopened cans, properly labelled and identified for Owner's later use in maintenance. Store where directed. Remnants of used materials are not acceptable.

1.7 Delivery, Storage and Handling

1. Deliver all painting materials in sealed, original labelled containers bearing manufacturer's name, brand name, type of paint or coating and colour designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.
2. Store all paint materials in original labelled containers in a secure, dry, heated and well ventilated single designated area at a minimum ambient temperature of 7° C (45° F). Store materials and supplies away from heat generating devices. Only material used on this project to be stored on site.
3. All paint manufacturers and products shall be listed under the "Approved Products" section of the applicable MPI Manual.
4. Remove damaged, opened and rejected materials from site.

5. Provide minimum one fire extinguisher adjacent to storage area.
6. Take all necessary precautionary and safety measures to prevent fire hazard and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) shall be stored in suitable closed and rated containers and removed from the site on a daily basis.

1.8 Quality Assurance

1. Conform to the standards contained in the MPI Architectural Painting Specifications Manual (for new surfaces), latest edition and MPI Maintenance Repainting Manual (for existing surfaces), latest edition.
2. All paint manufacturers and products used shall be listed in the Master Painters Institute "Approved Products List", latest edition.

1.9 Mock-Ups

1. Two locations for each coating to be used. Locations to be chosen in conjunction with the Consultant and be representative of typical locations expected for the specified work. Mock-up to include surface preparation and application of coating (1000mm long).

1.10 Inspection and Testing

1. Notify the Consultant for review of preparation of steel surfaces and application of coating.
2. Do not commence primer, or topcoat application until you receive written authorization from the Consultant.
3. All coating applications shall be inspected in accordance with SSPC-PA2, Measurement of Dry Film Thickness with Magnetic Gauges, as well as ASTM D 3359, Standard Test Methods for Measuring Adhesion by Tape Test.
4. Arrange to have coating manufacturer's representative visit the site prior to applying any material, in order to approve general surface preparation.
5. Deficiencies shall be repaired in accordance with manufacturer's written instructions.
6. Inspection and testing of work done to repair deficiencies shall be paid for by the Contractor.

PART 2 - MATERIALS AND PRODUCTS

2.1 General

- .1 Paint materials to be products of a single manufacturer and designated by that manufacturer to be compatible with the existing conditions and to each other.

- .2 The paint used on this project shall be for exterior application.
- .3 All primers and base coats shall be tinted to a colour contrasting with the coats that follow.
- .4 All materials delivered to the site must be in the original containers with unbroken seals and intact labels clearly identifying the product.
- .5 Use materials in strict accordance with the manufacturer's specifications and requirements.
- .6 Paint colours will be selected by the Owner on site.

2.2 Paint Materials

- .1 Interior: Epoxy Primer / Epoxy Finish Coat

Manufacturer	Primer	Finish Coat
The Sherwin Williams Company	All Surface Enamel Latex Primer	All Surface Enamel Latex
The Sherwin Williams Company	Pro Industrial Universal Acrylic Primer	Pro Industrial High Performance Epoxy

PART 3 - EXECUTION

3.1 Quality Control

- .1 All work shall meet or exceed the more stringent of the manufacturer's requirements or the requirements of this Specification, or the standards quoted.

3.2 Storage of Materials

- .1 Store materials in a single location designated by the Consultant. Maintain neat and clean. Remove soiled and/or used rags at end of each workday to avoid risk of fire.

3.3 Surface Preparation

- .1 Surface preparation and painting of metal surfaces shall be done in accordance with the relevant Structural Steel Painting Council (SSPC) Specification, and the requirements of this Specification.
- .2 Remove deleterious materials including:
 - .1 All particles of dirt, rust, dust, chalk, mildew, grease, oil and any other deleterious materials which are detrimental to good bond by approved methods.
 - .2 all loose, flaking, blistered, deteriorated or otherwise unsound paint by approved methods.

- .3 Prepare all rusted surfaces by blasting to SSPC-SP3 (Power Tool Clean). Produce a smooth, clean surface without rust in pits and without rough edges or protrusions.
- .4 Old paint may remain if it is solidly adhering. It shall be considered to have sufficient adhesion if it cannot be lifted as a layer by inserting a knife blade under it.
- .5 Remove mildew by scrubbing with a solution of one tablespoon dry powdered laundry detergent and one quart hydrochloride type household bleach, to 3 quarts warm water. Follow with a thorough rinse with water. Wear protective glasses and gloves.
- .6 Dull by sanding all existing hard glossy paint surfaces to achieve maximum adhesion.
- .7 Clean all surfaces to remove dirt and chalk immediately prior to painting with a Trisodium Phosphate (TSP) solution, followed by a clear water rinse. Allow surface to dry, and paint prior to flash rust formation.

3.4 Site Preparation Prior to Painting

- .1 Mask over adjacent surfaces as required to produce neat and true paint lines at discontinuous edges.
- .2 Protect adjacent surfaces and surfaces below from dripping, overspray etc.
- .3 Install "WET PAINT" signs.
- .4 Enclose areas below the work to prevent access to pedestrians. Be responsible for any paint spilled on vehicles or other objects below the work area.

3.5 Material Preparation

- .1 Mix well before using.
- .2 Withdraw from original container only as much material as can be used in one day. Do not return unused material to original container.
- .3 Maintain containers closed if not extracting paint.
- .4 For thinning, use only those materials permitted by the Consultant and approved by the manufacturer.

3.6 Application of Primer Coat

- .1 Mix thoroughly to manufacturer's instructions.
- .2 Apply primer coat to all metal surfaces that were exposed by surface preparation.
- .3 Apply primer to exceed the minimum dry film thickness (DFT).

3.7 Application of Base/Finish Coats

- .1 Apply in strict accordance with manufacturer's requirements. Do not use any other paint application methods unless prior written approval is obtained from the Consultant.
- .2 Apply base coat and finish coats to all surfaces to exceed the minimum DFT specified in Paragraph 2.2.
- .3 The dried finish coat shall be uniform in appearance, colour, and gloss. The "lap-in" areas shall exhibit uniformity with the adjacent painted areas. The finish shall be free of dirt, coarse particles, or any other foreign matter.
- .4 The final finish coat shall completely cover in one application. The Contractor shall touch-up areas which were not properly coated the first time.

End of Section 09 91 20

DIVISION 08 — DOORS AND WINDOWS
SECTION 08 00 10 — DOOR HARDWARE SCHEDULE

END OF SECTION 08 00 10

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

1.1 HARDWARE GROUPS

HARDWARE MANUFACTURERS:

1. IV-IVES
2. BE-BEST
3. CBH-CANADIAN BUILDER HDW
4. STM-STANDARD METAL
5. RK-ROCKWOOD
6. SG-SARGENT
7. LC-LCN DOOR CLOSERS
8. CR-KN CROWDER
9. VD-VON DUPRIN

1.2 HARDWARE SCHEDULE

DOOR# 1 1st s Staff Room 117 D - 2105 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 2 1st s Room 117A D - 2130 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 3 1st s A Women Washroom - 2115 910 LH MULTI

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 27" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 4 1st s Mens Washroom A - 2125 905 RH MULTI

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 27" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 5 1st Triple Gymnasium C-T F1 - 2165 X 2x935mm+1x905mm LHR/RHR-RHR

9	EA	HINGES	5BB1454630NRP 4.5"X 4"	IV	32D
3	EA	EXIT DEVICE	12-8888F	SG	32D
3	EA	EXIT TRIMS	713-8 ETL	SG	26D
1	EA	KR MULLION	KR49547.6	VD	
4	EA	MORT. HOUSING	1E74C258RP3626	BE	626
4	EA	COLLAR	1ER812626	BE	626
3	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
1	EA	KICK PLATES	CBH903 8" X 32" TAPE	STM	32D
9	EA	DOOR SILENCERS	SR64	IV	GR
4	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 6 1st s Room 117A D 2110 910 LH

4	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 7 1st D Store A-D - 2055 2x910 RHR/LHR

6	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	storeROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
2	EA	FLUSH BOLTS	FB458	IV	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 8 1st D Gymnasium B-D - 2055 2x905 RHR/LHR

6	EA	HINGES	5BB1454630NRP 4.5"X 4"	IV	32D
2	EA	EXIT DEVICE	12-8888F	SG	32D
2	EA	EXIT TRIMS	713-8 ETL	SG	26D
2	EA	MORT. HOUSING	1E74C258RP3626	BE	626
2	EA	COLLAR	1ER812626	BE	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 9 1st s A - Boy Change rm 2110 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 10 1st D Gymnasium B-D - 2115 2x915 RHR/LHR

6	EA	HINGES	5BB1454630NRP 4.5"X 4"	IV	32D
2	EA	EXIT DEVICE	12-8888F	SG	32D
2	EA	EXIT TRIMS	713-8 ETL	SG	26D
2	EA	MORT. HOUSING	1E74C258RP3626	BE	626
2	EA	COLLAR	1ER812626	BE	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 11 1st D GYM ST 122B A-D - 2110 2x910 LH/RH

6	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
2	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	FLUSH BOLT	FB458	IV	626
2	EA	KICK PLATES	CBH903 8" X 28" TAPE	STM	32D
2	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
6	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 12 1st s Guid 120D D - 2120 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 13 1st s 120 D - 2115 905 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 14 1st s Guid 120E D - 2120 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 15 1st s D – WK ROOM 120F 2125 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 16 1st s D Health Room 120G - 2125 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 17 1st s Genral office 120 B - 2130 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

REUSE DOOR OPERATOR ET AL

DOOR# 18 1st s Principle 120A D - 2110 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 19 1st s VPR 120B D - 2110 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 20 1st s VPR-Inside D - 2110 855 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 22 1st s D – Photocopy Room-Inside 2110 850 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 23 1st D Stage 122A D-D - - 2110 2x910 LH/RHA

6	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
2	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	FLUSH BOLT	FB458	IV	626
2	EA	KICK PLATES	CBH903 8" X 28" TAPE	STM	32D
2	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
6	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 24 1st s Vestibule 125 D - 2125 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 25 1st s D Conference Room 126 - 2120 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 27 1st s A Washroom 126 B ALL GENDER- 2125 755 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	MORT.LOCK W/IND	L9456 O6B L283722	SCH	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 28" TAPE	CBH	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 28 1st s GENERL OFFICE 120 D – 2105 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 29 1st D LIBRARY 121 B-D- 2129 2X910 LHR/RHRA

6	EA	HINGES	5BB1454630NRP 4.5"X 4"	IV	32D
2	EA	EXIT DEVICE	12-8888F	SG	32D
2	EA	HOSPITAL PULL	CBH375 CTC	CBH	32D
2	EA	RIM. HOUSING	12E72CRP3626	BE	626
2	EA	COLLAR	1ER812626	BE	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 30 1st D Hallway B-D STAIRS F2 45 min- 2590 2x910 LHR/RHR F.R.

8	EA	HINGES	5BB1HW454630NRP 4.5"X 4"	IV	32D
2	EA	SVR EXIT DEVICE	12-NB8713F ETL	SG	32D
2	EA	MORT. HOUSING	1E74C258RP3626	BE	626
2	EA	COLLAR	1ER812626	BE	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

REUSE MAG. HOLD OPENS BY PDSB

DOOR# 31 1st s Academic storge 127A - - 2110 910 PAINT ONLY LH

1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	DOOR CLOSER	4040XPPA	LC	689

DOOR# 32 1st s Boiler/ mechanical Room 128 A - 45 minutes 2110 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 33 1st s Classroom 101A C – 2110 910 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 34 1st s Music Room C – 2110 910 RH ACCOUSTIC

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	AUTO DOOR BOTTOM	CT-50- 36	KNC	AL
1	EA	SOUND SEAL	6216 17'2"	KNC	BLK
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 35 1st MUSIC TO Stage 122A C – 2120 1055 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	COMM. LOCK	9K37S15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	SOUND SEAL	6216 20'4"	KNC	BLK
1	EA	KICK PLATES	CBH903 8" X 40" TAPE	CBH	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
2	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 36 1st s HALLWAY TO Stage 122A C – 2120 905 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	SOUND SEAL	6216 17'2"	KNC	BLK
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 37 1st s Classroom 101B C - - 2105 910 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF. STOP	904S	GLYN	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 38 1st s Classroom 103 C - - 2120 905 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF. STOP	904S	GLYN	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 39 1st s ESL 114 C - - 2120 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 40 1st D Hallway B-D F3 45 min -2850 2850(2105 (2)905) LHR/RHR

8	EA	HINGES	5BB1HW454630NRP 4.5"X 4"	IV	32D
2	EA	SVR EXIT DEVICE	12-NB8713F ETL	SG	32D
2	EA	MORT. HOUSING	1E74C258RP3626	BE	626
2	EA	COLLAR	1ER812626	BE	626
1	EA	DOOR CLOSER	4040XP EDA	LC	689
1	EA	SE DOOR CLOSER	4040SE-24V(LHR DOOR)	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 41 1st s Girls Washroom 138A - - 2110 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	STRIKE FILLER	BS-161	DJ	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 42 1st s Female Instructor 124A D - - 2130 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 43 1st s Girls Change Room 124 D - - 2120 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	STRIKE FILLER	BS-161	DJ	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 44 1st s Washroom 124B A -2120 910 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	LOUVRE	LV-IYG1812	RK	
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 45 1st s Boys Washroom 137 A - - 2115 905 LH

3	EA	HINGES	SC5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 46 1st s Mechanical 136 A - - 2110 900 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 47 1st s Classroom 112 C - - 2120 905 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 48 1st s Boys Change Room 123 D - - 2120 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 49 1st s Instructor 123A D - - 2120 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 50 1st s Washroom 123B A - - 2105 855 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	LOUVRE	LV-IYG1812	RK	
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY

DOOR# 52 1st s CUSTODIAN 135 D- 2060 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 53 1st s Seminar 134 C-2055 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 54 1st s MUSIC Room 115 C- 2055 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	SOUND SEAL	6216 17'2"	KNC	BLK
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 55 1st D Classroom 112 C-D- 2115 2X910 LHRA/RHR

6	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	EXIT DEVICE	12-8888F	SG	32D
1	EA	LEVER TRIM	713-8 ETL	SG	626
1	EA	MORT HOUSING	1E74C208RP3	BE	626
1	EA	COLLAR	1ER218	BE	626
1	EA	DBL DR STRIKE	644	SG	BLK
2	EA	OH SURF STOPS	904S	GLYN	32D
2	EA	DOOR CLOSER	4040XPPA	LC	689
2	EA	FLUSH BOLTS	FB458	IVES	626
6	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

ASTRAGAL BY DOOR SUPPLIER

DOOR# 56 1st s Store 112A A – 2110 910 RHR F.R.

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 57 1st s Classroom 113B C- 2055 905 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	WALL STOP	WS3	KRM	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 58 1st Classroom 113A C- 2060 905 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	WALL STOP	WS3	KRM	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 59 1st s Boys Washroom 132 A- 2060 900 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 33.5" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 60 1st s Girls Washroom 131 A- 2065 900 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 33.5" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 61 1st s Preparation Room 133 D- 2060 905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 62 1st s Lunch Room 108 D- 2065 905

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	EXIT DEVICE	12-8888F	SG	32D
1	EA	HOSPITAL PULL	CBH375 CTC	CBH	32D
1	EA	RIM HOUSING	12E72RP3	BE	626
1	EA	COLLAR	1ER218	BE	626
1	EA	DOOR CLOSER	4040PPA	LC	689
1	EA	WALL STOP	WS3	KRM	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 63 1st s Classroom 111B C – 2060 905 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 64 1st s Classroom 111A C -2060 905 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 65 1st s Lunch Room 108 D- 2065 905 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	EXIT DEVICE	12-8888F	SG	32D
1	EA	HOSPITAL PULL	CBH375 CTC	CBH	32D
1	EA	RIM HOUSING	12E72RP3	BE	626
1	EA	COLLAR	1ER218	BE	626
1	EA	DOOR CLOSER	4040XPPA	LC	689
1	EA	WALL STOP	WS3	KRM	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 66 1st D Hallway B-D1 F4 45 MIN- 2115 2X905 DUAL EGREES LHR/LHR

6	EA	HINGES	5BB1HW454630NRP 4.5"X 4"	IV	32D
2	EA	EXIT DEVICE	12-8888F	SG	32D
2	EA	EXIT TRIMS	713-8 ETL	SG	26D
3	EA	MORT. HOUSING	1E74C258RP3626	BE	626
3	EA	COLLAR	1ER812626	BE	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

REUSE MAG HOLD OPENS BY PDSB

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 67 1st s ART Room 109 C -2060 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 68 1st s Washroom 130 A -2075 910 MAKING ADO

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 69 1st s Science 107 C – 90 MIN – 2060 900 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 33.5" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 70 1st s Store 107A A 2050 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 71 1st s Classroom 106 C . 2115 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 72 1st s Classroom 105 C . 2115 905 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF STOP	904S	GLYN	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 73 1st s Classroom 104 C . 2110 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 74 1st s Custodian 129 D . 2110 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	HO DOOR CLOSER	4040XPCHSH	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 75 1st s Electrical 129A A . 2110 910 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 76 2nd D Stair B-D F5 45 minutes 2135 2X910 RHR/LHR

8	EA	HINGES	5BB1HW454630NRP 4.5"X 4"	IV	32D
2	EA	SVR EXIT DEVICE	12-NB8713F ETL	SG	32D
3	EA	MORT. HOUSING	1E74C258RP3626	BE	626
3	EA	COLLAR	1ER812626	BE	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

REUSE MAG HOLD OPENS BY PDSB

DOOR# 77 2nd s Academic Storage 215 A-2120 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 78 2nd s Mech 215A A -2115 910 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 79 2nd s Women Washroom 214 A—2125 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	LOUVRE	LV-IYG1812	RK	
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 80 2nd s Men Washroom 213 A -2120905 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	LOUVRE	LV-IYG1812	RK	
1	EA	DOOR CLOSER	4040XPPA	LC	689
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 81 2nd s Boys Washroom 212 A- 2110905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 82 2nd s Girls Washroom 211 A-2110 905 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	HOSPITAL PULL	CBH375	CBH	32D
1	EA	FINGER PULL	CBH352	CBH	32D
1	EA	DEADBOLT LOCK	8T37SSTK 626 LESS CORE	BE	626
1	EA	DOOR CLOSER	4040XP	LC	689
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	PUSH PLATE	K11A 4 X 16"	STM	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 83 2nd s Classroom 201 C-2125 910 LH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 84 2nd s Classroom 203A C-2100 910 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF. STOP	904S	GLYN	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 85 2nd s Classroom 202 C-2130 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 86 2nd s Academic Storage 210 A-2120 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	storeROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 87 2nd s Classroom 2038 C-2115 915 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF STOP	904S	GLYN	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 88 2nd s Classroom 205 C-2135 910 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF STOP	904S	GLYN	32D
1	EA	LOUVRE	LV-IYG1812	RK	
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 89 2nd s ART Room 206 C-2120 910 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	WALL STOP	WS3	KRM	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 90 2nd s Store206A A-2115 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 91 2nd s ART Room 206 C-2115 910 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	WALL STOP	WS3	KRM	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 92 2nd s Science Room 208 C-2125 915 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	WALL STOP	WS3	KRM	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 93 2nd s Science Room 208 C-2115 910 LHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	WALL STOP	WS3	KRM	626
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

**PEEL DISTRICT SCHOOL BOARD
HOMELANDS PS**

DOOR# 94 2nd s Store 208A A-2115 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 95 2nd s Custodian Storage 209A-2115 910 RH

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	STOREROOM LOCK	9K37D15DS3626RHR LESS CORE	BE	626
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

DOOR# 96 2nd s Classroom 207 C-2125 910 RHR

3	EA	HINGES	5BB1454630NRP 4-1/2" X 4"	IV	32D
1	EA	CLASSROOM LOCK	9K37R15DS3626RHR LESS CORE	BE	626
1	EA	OH SURF STOP	904S	GLYN	32D
3	EA	DOOR SILENCERS	SR64	IVES	GRY
1	EA	KICK PLATES	CBH903 8" X 34" TAPE	CBH	32D
1	EA	INTERIOR CORES	IC7N26	BE	626

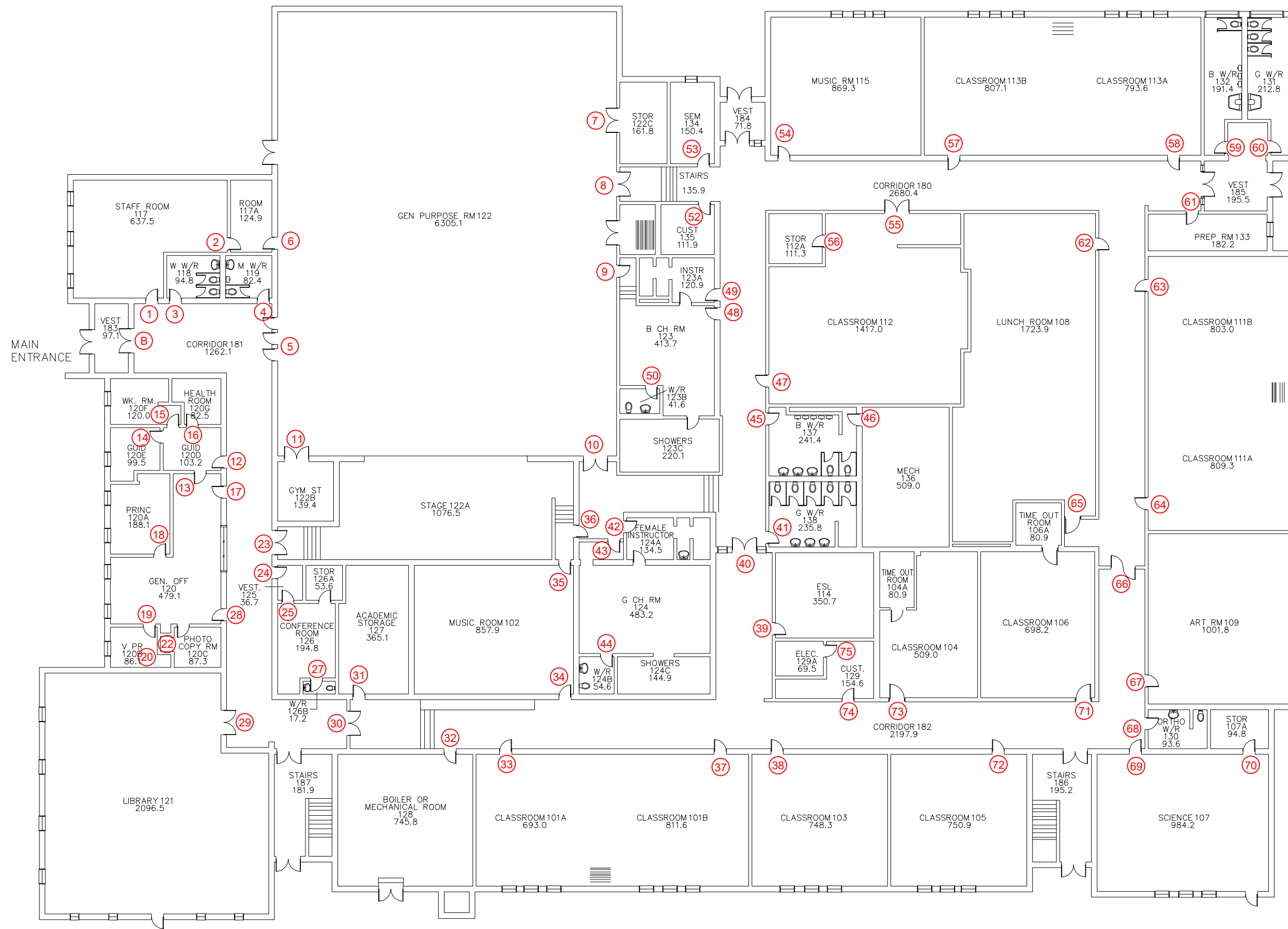
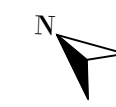
DOOR# 97 2nd D Stair C-D F5 45 minutes 2135 2x910 RHR/LHR

8	EA	HINGES	5BB1HW454630NRP 4.5"X 4"	IV	32D
2	EA	SVR EXIT DEVICE	12-NB8713F ETL	SG	32D
2	EA	MORT. HOUSING	1E74C258RP3626	BE	626
2	EA	COLLAR	1ER812626	BE	626
1	EA	WALL STOP	WS3	KRM	626
2	EA	DOOR CLOSER	4040XP EDA	LC	689
2	EA	KICK PLATES	CBH903 8" X 34" TAPE	STM	32D
6	EA	DOOR SILENCERS	SR64	IV	GR
2	EA	INTERIOR CORES	IC7N26	BE	626

REUSE MAG HOLD OPENS BY PDSB

END OF SECTION 087100
INTERIOR CORES SUPPLIED AND INSTALLED BY PDSB

Drawings



FIRST FLOOR PLAN FLOOR GFA 43,200.2 CORR. GFA 7,017.80

Note:
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311 MATHESON BOULEVARD EAST
MISSISSAUGA, ONTARIO L4Z 1X8
TEL: (905) 890-9000 FAX: (905) 890-9005

CLIENT ADDRESS:
peel District School Board
 933 CENTRAL PARKWAY WEST
 MISSISSAUGA, ON

PROJECT NAME:
 INTERIOR DOOR REPLACEMENT AT
 HOMELANDS SENIOR PUBLIC SCHOOL
 2420 HOMELANDS DRIVE,
 MISSISSAUGA, ON

DRAWING TITLE:
 LOCATION OF INTERIOR DOOR REPLACEMENT
 GROUND FLOOR PLAN

PROJ. NO.: 28769	DRAWING NO.:
DRW. BY: AF	SK1
CHK. BY: NH	
SCALE: NTS	
DATE: JAN. 2024	



SECOND FLOOR PLAN FLOOR GFA 11,741.1 CORR. GFA 2,127.9



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JEP CONSULTANTS
Occupational Hygiene & Environment

311 MATHESON BOULEVARD EAST
MISSISSAUGA, ONTARIO L4Z 1X8
TEL: (905) 890 - 9000 FAX: (905) 890 - 9005

CLIENT ADDRESS:

peel District School Board

933 CENTRAL PARKWAY WEST
MISSISSAUGA, ON

PROJECT NAME:

INTERIOR DOOR REPLACEMENT AT HOMELANDS SENIOR PUBLIC SCHOOL
2420 HOMELANDS DRIVE, MISSISSAUGA, ON

DRAWING TITLE:

LOCATION OF INTERIOR DOOR REPLACEMENT SECOND FLOOR PLAN

PROJ. NO.: 28769	DRAWING NO.:
DRW. BY: DN	SK2
CHK. BY: NH	
SCALE: NTS	
DATE: JAN. 2024	

**SCH-1
INTERIOR DOOR SCHEDULE**

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension- Height (mm)	Door Approximate Dimension- Width (mm)	Comments
1	1st	S	Staff Room 117	D	-	-	2105	905	Door slab replacement only, clean and repaint frame.
2	1st	S	Room 117A	D	-	-	2130	910	Door slab replacement only, clean and repaint frame.
3	1st	S	Women Washroom	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
4	1st	S	Men Washroom	A	-	-	2125	905	Door slab replacement only, clean and repaint frame.
5	1st	Triple	Gymnasium	C-T	F1	-	2165	2950	Door and frame replacement. The door slab width dimensions are to be approximate 2x935mm+1x905mm wide.
6	1st	S	Room 117A	D	-	-	2110	910	Bi-level door slab replacement only with new door slab type D, clean and repaint frame. Prepare the frame for new hardware (lockset) standard installation height.
7	1st	D	Store	A-D	-	-	2055	2x910	Door slabs replacement only, clean and repaint frame (frame without mullion).
8	1st	D	Gymnasium	B-D	-	-	2055	2x905	Door slabs replacement only, clean and repaint frame (frame with fixed mullion).
9	1st	S	Boy Change Room	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
10	1st	D	Gymnasium	B-D	-	-	2115	2x915	Door slabs replacement only, clean and repaint frame (frame with fixed mullion).
11	1st	D	GYM ST 122B	A-D	-	-	2110	2x910	Door slabs replacement only, clean and repaint frame (frame without mullion).
12	1st	S	Guid 120D	D	-	-	2120	910	Door slab replacement only, clean and repaint frame.
13	1st	S	Genral office 120	D	-	-	2115	905	Door slabs replacement only, clean and repaint frame.
14	1st	S	Guid 120E	D	-	-	2120	905	Door slab replacement only, clean and repaint frame.
15	1st	S	WK. Room 120F	D	-	-	2125	905	Door slab replacement only, clean and repaint frame.
16	1st	S	Health Room 120G	D	-	-	2125	905	Door slab replacement only, clean and repaint frame.
17	1st	S	Genral office 120	B	-	-	2130	910	Door slab replacement only, clean and repaint frame.
18	1st	S	Principle 120A	D	-	-	2110	910	Door slab replacement only, clean and repaint frame.
19	1st	S	V PR 120B	D	-	-	2110	905	Door slab replacement only, clean and repaint frame.
20	1sr	S	V PR-Inside	D	-	-	2110	855	Door slab replacement only, clean and repaint frame.
22	1st	S	Photocopy Room-Inside	D	-	-	2110	850	Door slab replacement only, clean and repaint frame.
23	1st	D	Stage 122A	D-D	-	-	2110	2x910	Door slab replacement only, clean and repaint frame (frame is without mullion).
24	1st	S	Vestibule 125	D	-	-	2125	905	Door slab replacement only, clean and repaint frame..
25	1st	S	Conference Room 126	D	-	-	2120	905	Door slab replacement only, clean and repaint frame.

**SCH-1
INTERIOR DOOR SCHEDULE**

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension- Height (mm)	Door Approximate Dimension- Width (mm)	Comments
27	1st	S	Washroom 126 B	A	-	-	2125	755	Door slab replacement only, clean and repaint frame.
28	1st	S	Genral office 120	D	-	-	2105	905	Door slab replacement only, clean and repaint frame.
29	1st	D	Library 121	B-D	-	-	2129	2x910	Door slabs replacement only, clean and repaint frame (frame is without mullion).
30	1st	D	Hallway	B-D	F2	45 minutes	2590	2580	Replace and install new frame and door slabs. Each door slab is to be approximate 2120 mm heightx910 mm width. Mag locks (hold open) to be installed by PDSB forces.
31	1st	S	Academic storge 127	-	-	-	-	-	Clean and repaint door slab and frame only.
32	1st	S	Boiler/Mechanic al Room 128	A	-	45 minutes	2110	910	Door slab replacement only, clean and repaint frame.
33	1st	S	Classroom 101A	C	-	-	2110	910	Door slab replacement only, clean and repaint frame..
34	1st	S	Muisc Room 102	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
35	1st	S	Stage 122A	D	-	-	2120	1055	Door slab replacement only, clean and repaint frame.
36	1st	S	Stage 122A	D	-	-	2130	910	Door slab replacement only, clean and repaint frame.
37	1st	S	Classroom 101B	C	-	-	2105	910	Door slab replacement only, clean and repaint frame.
38	1st	S	Classroom 103	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
39	1st	S	ESL 114	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
40	1st	D	Hallway	B-D	F3	45 minutes	2850	2850	Replace and install new frame and door slabs. Each door slab is to be approximate 2105mm heightx905mm width. Mag locks (hold open) to be installed by PDSB forces.
41	1st	S	Girls Washroom 138	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
42	1st	S	Female Instructor 124A	D	-	-	2130	910	Door slab replacement only, clean and repaint frame.
43	1st	S	Girls Change Room 124	D	-	-	2120	905	Door slab replacement only, clean and repaint frame.
44	1st	S	Washroom 124B	A	-	-	2120	910	Door slab replacement only, clean and repaint frame.
45	1st	S	Boys Washroom 137	A	-	-	2115	905	Door slab replacement only, clean and repaint frame.
46	1st	S	Mechanical 136	A	-	-	2110	900	Door slab replacement only, clean and repaint frame.
47	1st	S	Classroom 112	C	-	-	2120	905	Door slab replacement only, clean and repaint frame.
48	1st	S	Boys Change Room 123	D	-	-	2120	910	Door slab replacement only, clean and repaint frame.
49	1st	S	Instructor 123A	D	-	-	2120	910	Door slab replacement only, clean and repaint frame.
50	1st	S	Washroom 123B	A	-	-	2105	855	Door slab replacement only, clean and repaint frame.

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Occupational Hygiene & Environment

311 MATHESON BOULEVARD EAST
MISSISSAUGA, ONTARIO L4Z 1X8
TEL: (905) 890-9000 FAX: (905) 890-9005

CLIENT ADDRESS:

peel District School Board

933 CENTRAL PARKWAY WEST
MISSISSAUGA, ON

PROJECT NAME:

INTERIOR DOOR
REPLACEMENT
AT
HOMELANDS SENIOR
PUBLIC SCHOOL
2420 HOMELANDS DRIVE,
MISSISSAUGA, ON

DRAWING TITLE:

INDOOR DOOR SCHEDULE

PROJ. NO.:	28769	DRAWING NO.:	
DRW. BY:	DN		
CHK. BY:	NH		
SCALE:	NTS		
DATE:	JAN. 2024		

SK3

**SCH-1
INTERIOR DOOR SCHEDULE**

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension- Height (mm)	Door Approximate Dimension- Width (mm)	Comments
52	1st	S	Gust 135	D	-	-	2060	905	Door slab replacement only, clean and repaint frame.
53	1st	S	Seminar 134	C	-	-	2055	905	Door slab replacement only, clean and repaint frame.
54	1st	S	Misc Room 115	C	-	-	2055	905	Door slab replacement only, clean and repaint frame.
55	1st	D	Classroom 112	C-D	-	-	2115	2x910	Door slab replacement only, clean and repaint frame.
56	1st	S	Store 112A	A	-	-	2110	910	Door slab replacement only, clean and repaint frame.
57	1st	S	Classroom 113B	C	-	-	2055	905	Door slab replacement only, clean and repaint frame.
58	1st	S	Classroom 113A	C	-	-	2060	905	Door slab replacement only, clean and repaint frame.
59	1st	S	Boys Washroom 132	A	-	-	2060	900	Door slab replacement only, clean and repaint frame.
60	1st	S	Girls Washroom 131	A	-	-	2065	900	Door slab replacement only, clean and repaint frame.
61	1st	S	Preparation Room 133	D	-	-	2060	905	Existing old metal door slab with wired glass lite is to be replaced.
62	1st	S	Lunch Room 108	D	-	-	2065	905	Door slab replacement only, clean and repaint frame.
63	1st	S	Classroom 111B	C	-	-	2060	905	Door slab replacement only, clean and repaint frame.
64	1st	S	Classroom 111A	C	-	-	2060	905	Door slab replacement only, clean and repaint frame.
65	1st	S	Lunch Room 108	D	-	-	2065	905	Door slab replacement only, clean and repaint frame.
66	1st	D	Hallway	B-D1	F4	45 minutes	2400	2610	Replace and install new frame and door slabs. Each door slab is to be approximate 2115mm heightx915 mm width with opposite swing direction and requires a frame without mullion. Mag locks (hold open) to be installed by PDSB forces.
67	1st	S	ART Room 109	C	-	-	2060	910	Door slab replacement only, clean and repaint frame.
68	1st	S	Washroom 130	A	-	-	2075	910	Door slab replacement only, clean and repaint frame.
69	1st	S	Science 107	C	-	90 minutes	2060	900	Door slab replacement only, clean and repaint frame.
70	1st	S	Store 107A	A	-	-	2050	910	Door slab replacement only, clean and repaint frame.
71	1st	S	Classroom 106	C	-	-	2115	910	Existing metal door slab with wired glass lite is to be replaced.
72	1st	S	Classroom 105	C	-	-	2115	905	Door slab replacement only, clean and repaint frame.
73	1st	S	Classroom 104	C	-	-	2110	910	Door slab replacement only, clean and repaint frame.
74	1st	S	Custodian 129	D	-	-	2110	910	Door slab replacement only, clean and repaint frame.
75	1st	S	Electrical 129A	A	-	-	2110	910	Door slab replacement only, clean and repaint frame.

**SCH-1
INTERIOR DOOR SCHEDULE**

Door ID	Floor	Single(S)/ Double (D)/ Triple (T)	Use of Room	Door Type	Frame Type	Fire Rating	Door Approximate Dimension- Height (mm)	Door Approximate Dimension- Width (mm)	Comments
76	2nd	D	Stair	B-D	F5	45 minutes	2600	1930	Replace and install new frame and door slabs. Each door slab is to be approximate 2135mm heightx910mm width. Mag locks (hold open) to be installed by PDSB forces.
77	2nd	S	Academic Storage 215	A	-	-	2120	910	Door slab replacement only, clean and repaint frame.
78	2nd	S	Mech 215A	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
79	2nd	S	Women Washroom 214	A	-	-	2125	910	Door slab replacement only, clean and repaint frame.
80	2nd	S	Men Washroom 213	A	-	-	2120	905	Door slab replacement only, clean and repaint frame.
81	2nd	S	Boys Washroom 212	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
82	2nd	S	Girls Washroom 211	A	-	-	2110	905	Door slab replacement only, clean and repaint frame.
83	2nd	S	Classroom 201	C	-	-	2125	910	Door slab replacement only, clean and repaint frame.
84	2nd	S	Classroom 203A	C	-	-	2100	910	Door slab replacement only, clean and repaint frame.
85	2nd	S	Classroom 202	C	-	-	2130	910	Door slab replacement only, clean and repaint frame.
86	2nd	S	Academic Storage 210	A	-	-	2120	910	Door slab replacement only, clean and repaint frame.
87	2nd	S	Classroom 203B	C	-	-	2115	915	Door slab replacement only, clean and repaint frame.
88	2nd	S	Classroom 205	C	-	-	2135	910	Door slab replacement only, clean and repaint frame.
89	2nd	S	ART Room 206	C	-	-	2120	910	Door slab replacement only, clean and repaint frame.
90	2nd	S	Store 206A	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
91	2nd	S	ART Room 206	C	-	-	2115	910	Door slab replacement only, clean and repaint frame.
92	2nd	S	Science Room 208	C	-	-	2125	915	Door slab replacement only, clean and repaint frame.
93	2nd	S	Science Room 208	C	-	-	2115	910	Door slab replacement only, clean and repaint frame.
94	2nd	S	Store 208A	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
95	2nd	S	Custodian Storage 209	A	-	-	2115	910	Door slab replacement only, clean and repaint frame.
96	2nd	S	Classroom 207	C	-	-	2125	910	Door slab replacement only, clean and repaint frame.
97	2nd	D	Stair	B-D	F5	45 minutes	2600	1930	Replace and install new frame and door slabs. Each door slab is to be approximate 2135mm heightx910 mm width. Mag locks (hold open) to be installed by PDSB forces.

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peel District School Board

933 CENTRAL PARKWAY WEST
MISSISSAUGA, ON

PROJECT NAME:

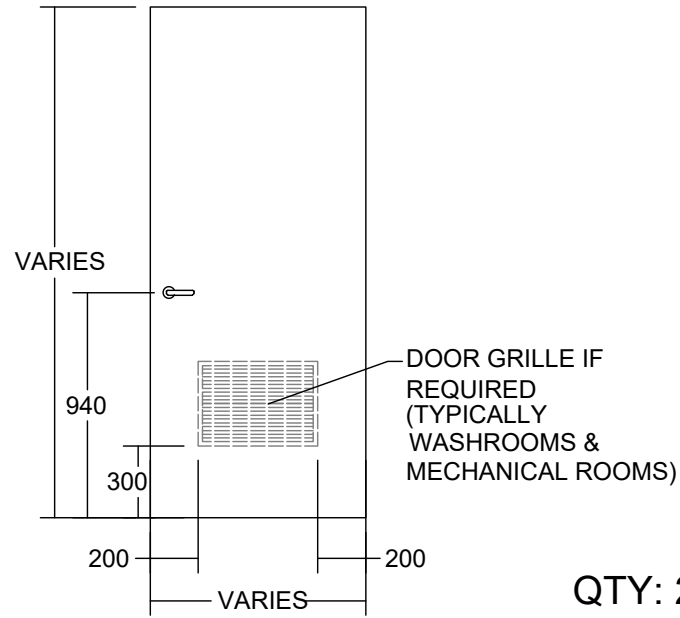
INTERIOR DOOR
REPLACEMENT
AT
HOMELANDS SENIOR
PUBLIC SCHOOL
2420 HOMELANDS DRIVE,
MISSISSAUGA, ON

DRAWING TITLE:

INDOOR DOOR SCHEDULE

PROJ. NO.:	28769	DRAWING NO.:	
DRW. BY:	DN		
CHK. BY:	NH		
SCALE:	NTS		
DATE:	JAN. 2024		

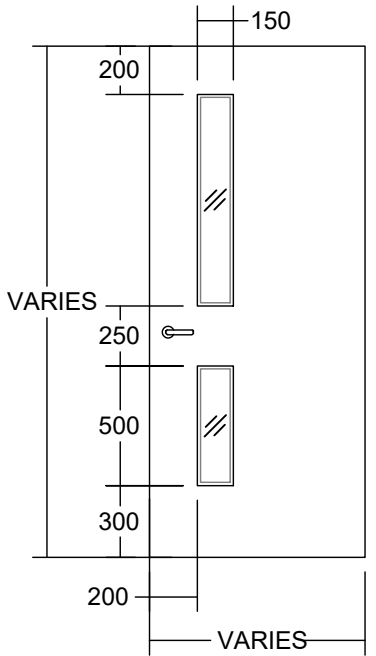
SK4



QTY: 26

TYPE A

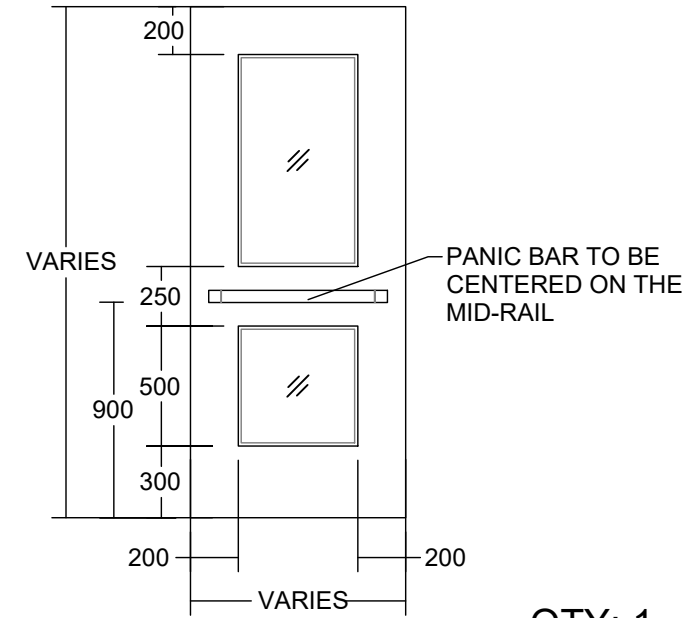
950mm DOOR WIDTH: USE AT WASHROOMS AND CHANGE ROOMS
 1000mm DOOR WIDTH: USE AT OUTSIDE STORAGE
 1100mm DOOR WIDTH: USE AT ELECTRICAL ROOMS, AND DOORS WITH AUTOMATIC HARDWARE
 1200mm DOOR WIDTH: USE AT "CORRIDOR TO CUSTODIAN STORAGE", "CUSTODIAL STORAGE TO EXTERIOR STORAGE", AND ORTHO WASHROOM



QTY: 27

TYPE C

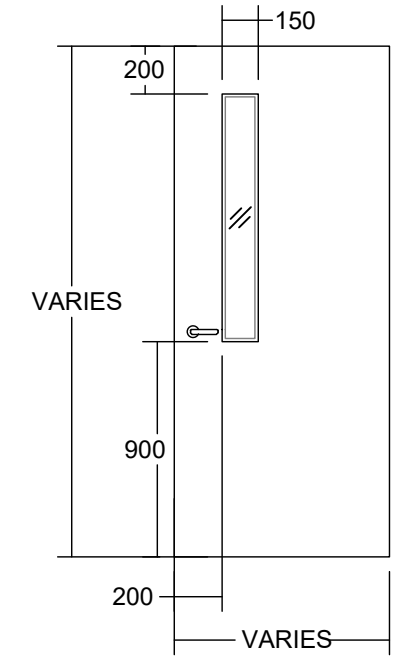
950mm DOOR WIDTH: USE AT TEACHER AND STAFF WORKROOMS, CUSTODIAL OFFICE, CLASSROOMS, AND ADMINISTRATIVE AREAS
 1000mm DOOR WIDTH: USE AT GYMNASIUM
 1100mm DOOR WIDTH: USE AT ALL DOORS WITH AUTOMATIC HARDWARE



QTY: 1

TYPE B

950mm DOOR WIDTH: USE AT GENERAL OFFICE
 1000mm DOOR WIDTH: USE AT CORRIDORS, STAIRWELLS AND LIBRARY
 1100mm DOOR WIDTH: USE AT ALL DOORS WITH AUTOMATIC HARDWARE INCLUDING FRONT ENTRANCE



QTY: 26

TYPE D

SAME USES AS TYPE C

GENERAL NOTES:

(1.) REFER TO HOLLOW METAL, GLAZING AND HARDWARE SPECIFICATIONS FOR DOOR CONSTRUCTION MATERIALS.

(2.) DOOR OPENING DEVICES TO BE OPERABLE WITH A CLOSED FIST AND MOUNTED BETWEEN 900mm AND 1100mm ABOVE FINISHED FLOOR. (OBC 3.8.3.3.(3))

(3.) DOOR RELEASE HARDWARE TO BE MOUNTED MAX. 1200mm ABOVE FINISHED FLOOR (OBC 3.3.1.12.(5))

(4.) WHERE A VISION PANEL IS PROVIDED, IT MUST BE MIN. 75mm WIDE (OBC 3.8.3.3.(14))

(5.) WHERE A VISION PANEL IS PROVIDED, THE BOTTOM OF THE PANEL MUST BE MAX 900mm ABOVE FINISHED FLOOR (OBC 3.8.3.3.(14))

(6.) WHERE A VISION PANEL IS PROVIDED, THE EDGE OF THE PANEL CLOSEST TO THE LATCH IS NOT MORE THAN 250mm FROM THE LATCH SIDE OF THE DOOR (OBC 3.8.3.3.(14))

Note:
 Contractor must check and verify all dimensions and job site conditions and report any discrepancies to the appropriate authority prior to commencing construction.

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DATE	ISSUED FOR

GENERAL NOTES:

- LOCATIONS OF SITE FEATURES ARE APPROXIMATE AND MAY VARY FROM THAT SHOWN.
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OH CONSULTANTS
 Occupational Hygiene & Environment

311 MATHESON BOULEVARD EAST
 MISSISSAUGA, ONTARIO L4Z 1X8
 TEL: (905) 890-9000 FAX: (905) 890-9005

CLIENT ADDRESS:

peel District School Board

933 CENTRAL PARKWAY WEST
 MISSISSAUGA, ON

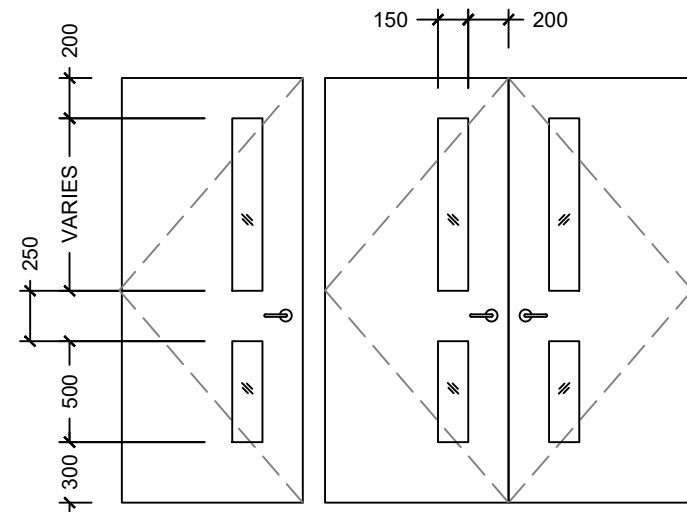
PROJECT NAME:

INTERIOR DOOR REPLACEMENT AT HOMELANDS SENIOR PUBLIC SCHOOL
 2420 HOMELANDS DRIVE, MISSISSAUGA, ON

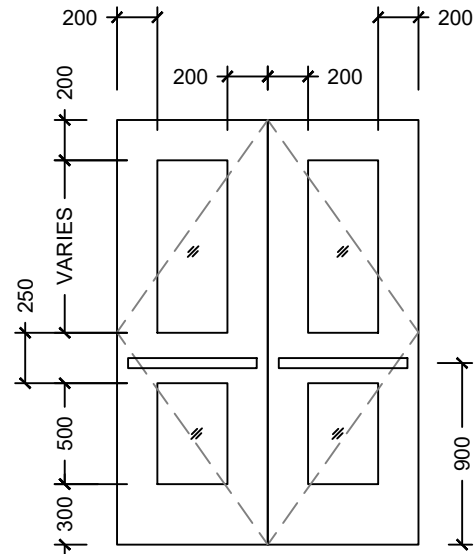
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DOOR TYPES

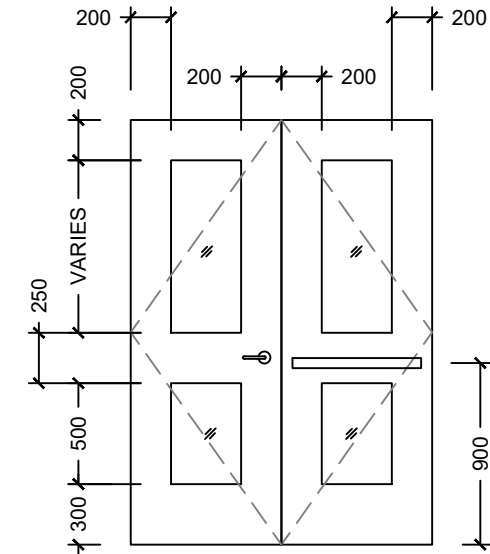
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DRW. BY: DN	SK5
CHK. BY: NH	
SCALE: NTS	
DATE: JAN. 2024	



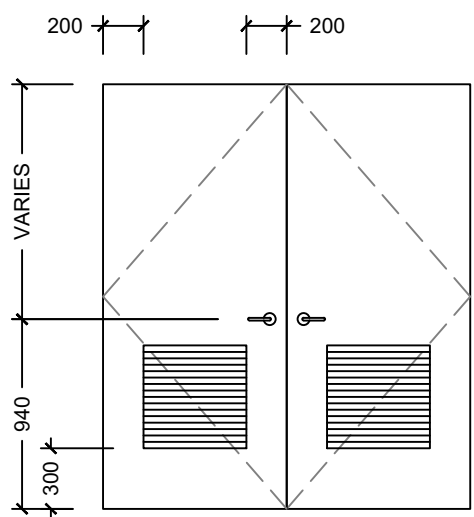
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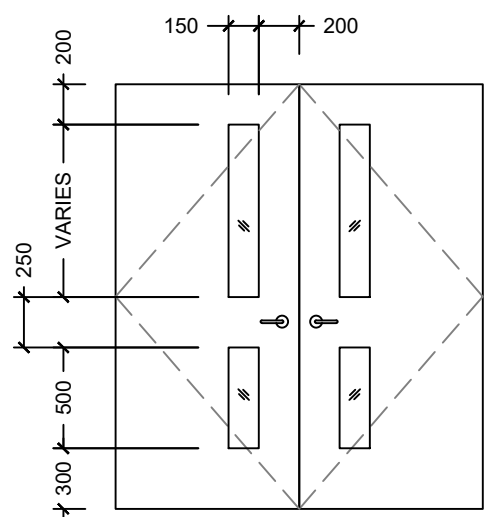
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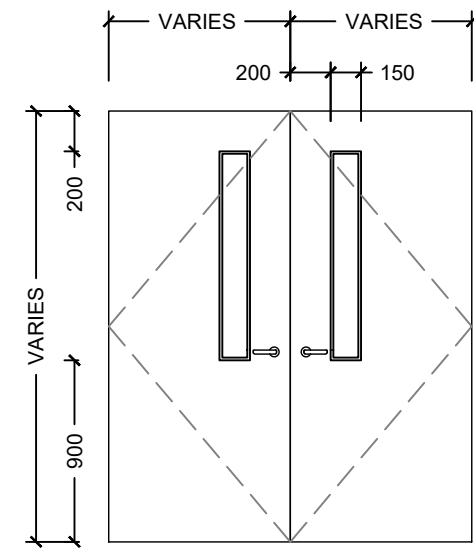
B-D1
QTY: 1



A-D
QTY: 2



C-D
QTY: 1



D-D
QTY: 1

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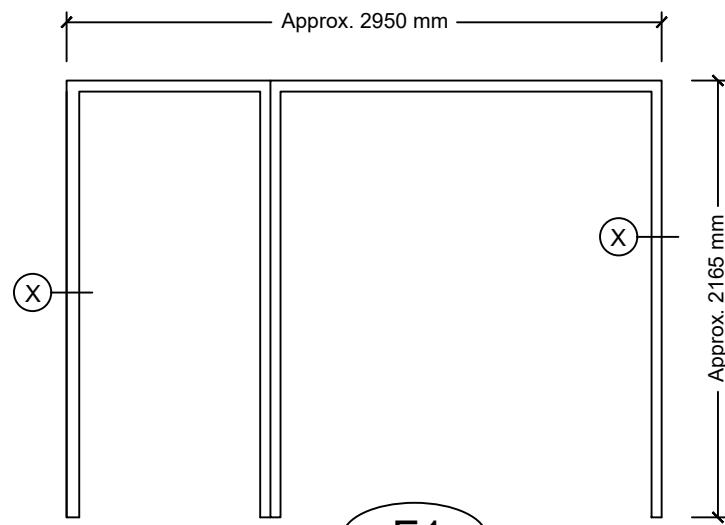
HF CONSULTANTS
Occupational Hygiene & Environment
311 MATHESON BOULEVARD EAST
MISSISSAUGA, ONTARIO L4Z 1X8
TEL: (905) 890-9000 FAX: (905) 890-9005

CLIENT ADDRESS:
peel District School Board
933 CENTRAL PARKWAY WEST
MISSISSAUGA, ON

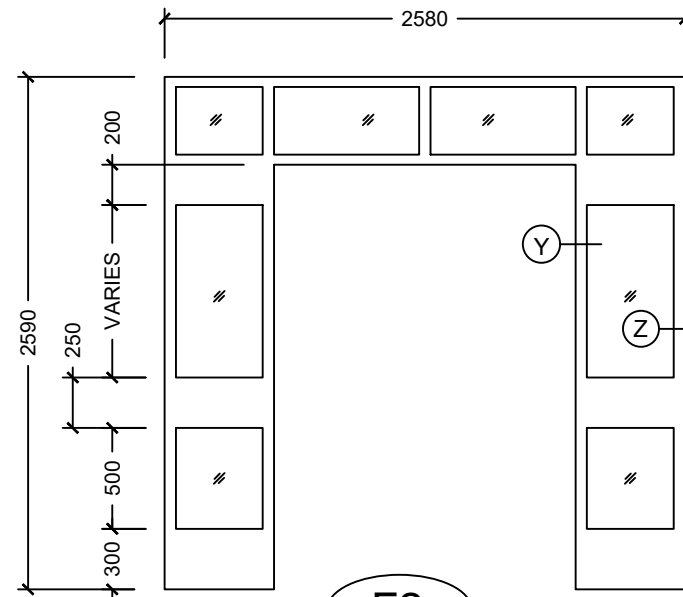
PROJECT NAME:
INTERIOR DOOR REPLACEMENT AT HOMELANDS SENIOR PUBLIC SCHOOL
2420 HOMELANDS DRIVE, MISSISSAUGA, ON

DRAWING TITLE:
DOOR SLAB TYPES SCHEDULE

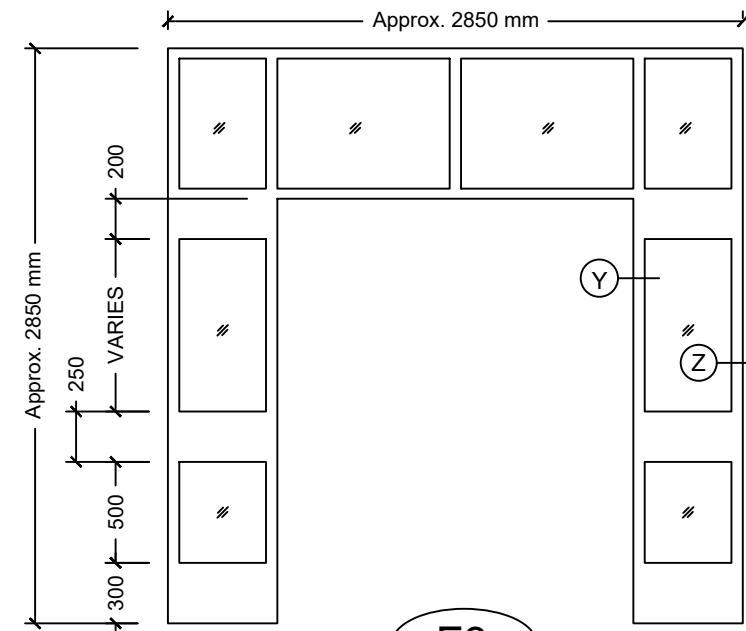
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DRW. BY: DN	SK6
CHK. BY: NH	
SCALE: NTS	
DATE: JAN. 2024	



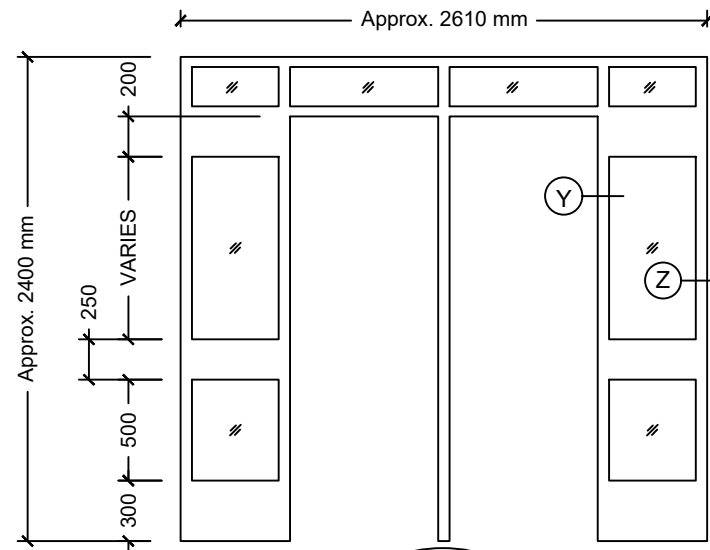
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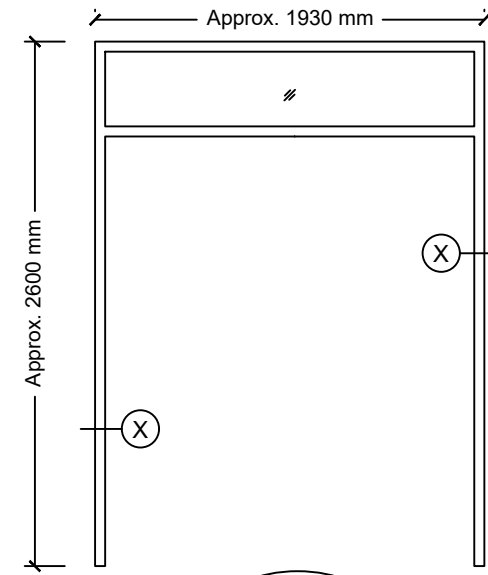
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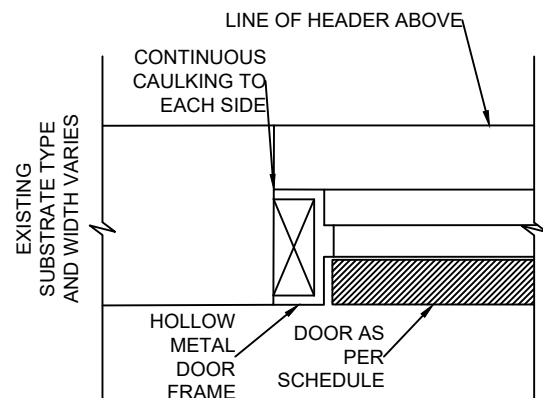
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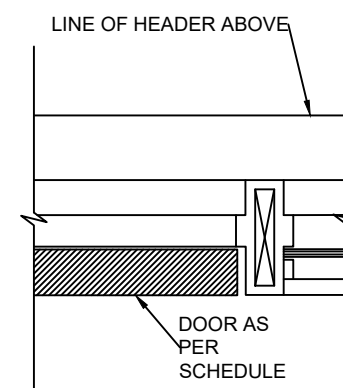
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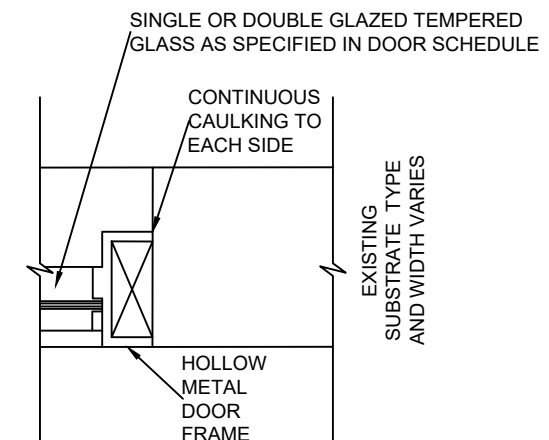
F5
QTY: 2



X TYPICAL DOOR JAMB DETAIL
N.T.S.



Y TYPICAL MULLION BETWEEN DOOR & LITE DETAIL
N.T.S.



Z TYPICAL GLASS JAMB DETAIL
N.T.S.

Note:
Contractor must check and verify all dimensions and job site conditions and report any discrepancies to the appropriate authority prior to commencing construction.

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MISSISSAUGA, ONTARIO L4Z 1X8
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CLIENT ADDRESS:

peel District School Board

933 CENTRAL PARKWAY WEST
MISSISSAUGA, ON

PROJECT NAME:

INTERIOR DOOR REPLACEMENT AT HOMELANDS SENIOR PUBLIC SCHOOL
2420 HOMELANDS DRIVE, MISSISSAUGA, ON

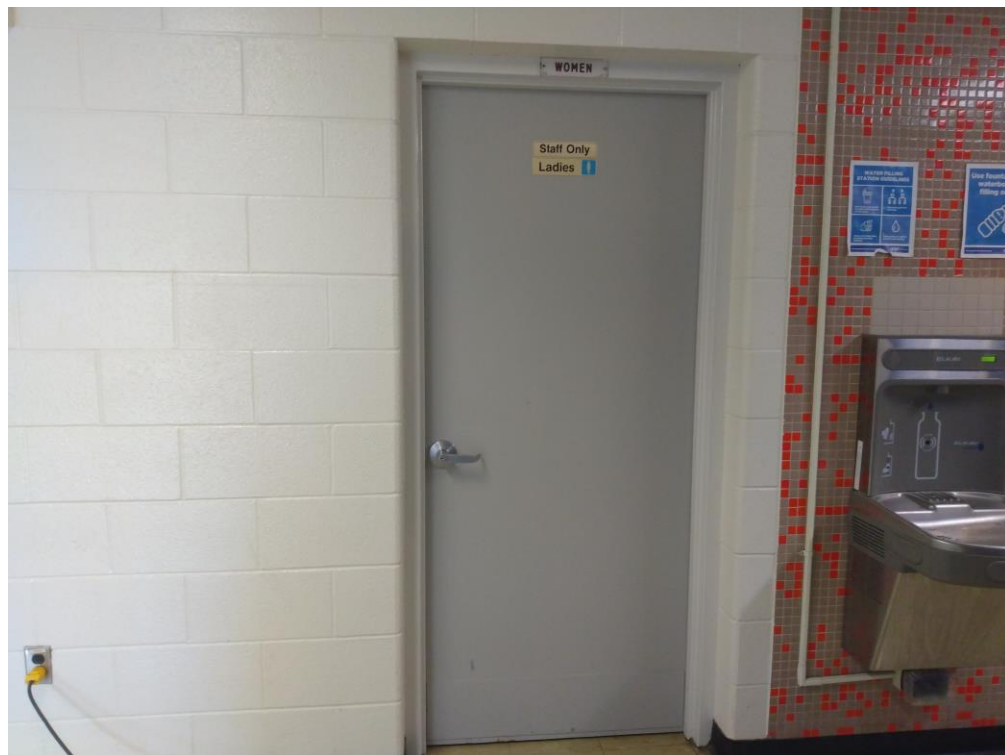
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DOOR FRAME TYPES SCHEDULE

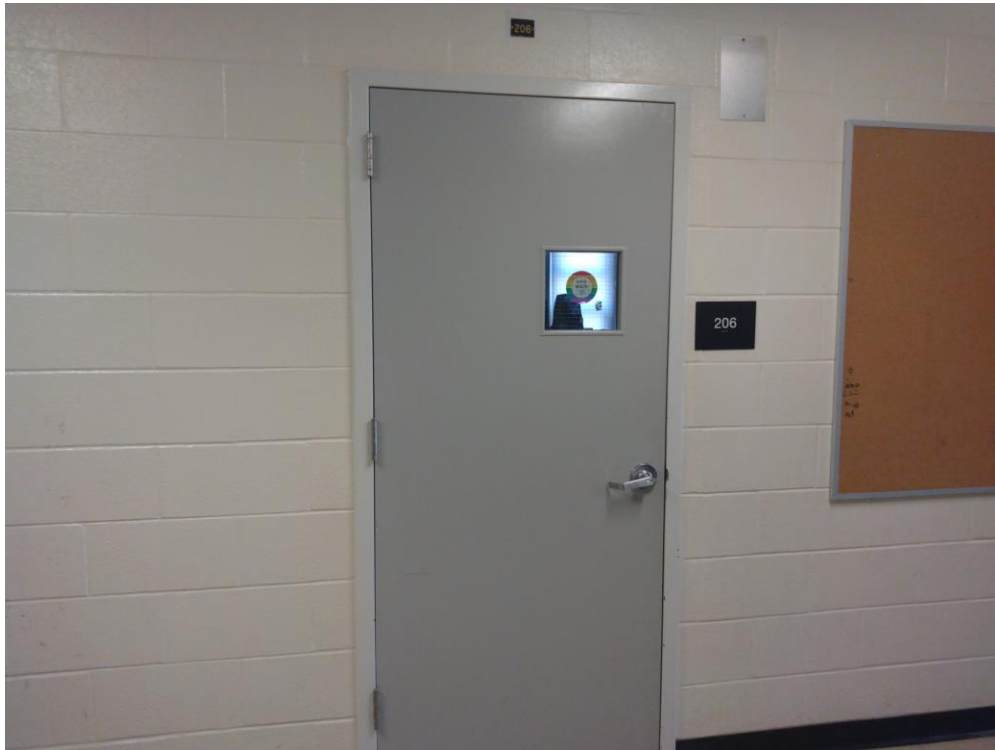
PROJ. NO.: 28769	DRAWING NO.:
DRW. BY: DN	SK7
CHK. BY: NH	
SCALE: NTS	
DATE: JAN. 2024	



Photograph 1: Existing elevation for single door slab replacement for door No. 12.



Photograph 2: Existing elevation for single door slab replacement for door No. 79.



Photograph 3: Existing elevation for single door slab replacement for door No. 72.



Photograph 4: Existing elevation for triple door slabs and frame replacement for door No. 5.



Photograph 5: Existing elevation for double door slab replacement for door No. 7.



Photograph 6: Existing elevation for double door slab replacement for door No. 29.



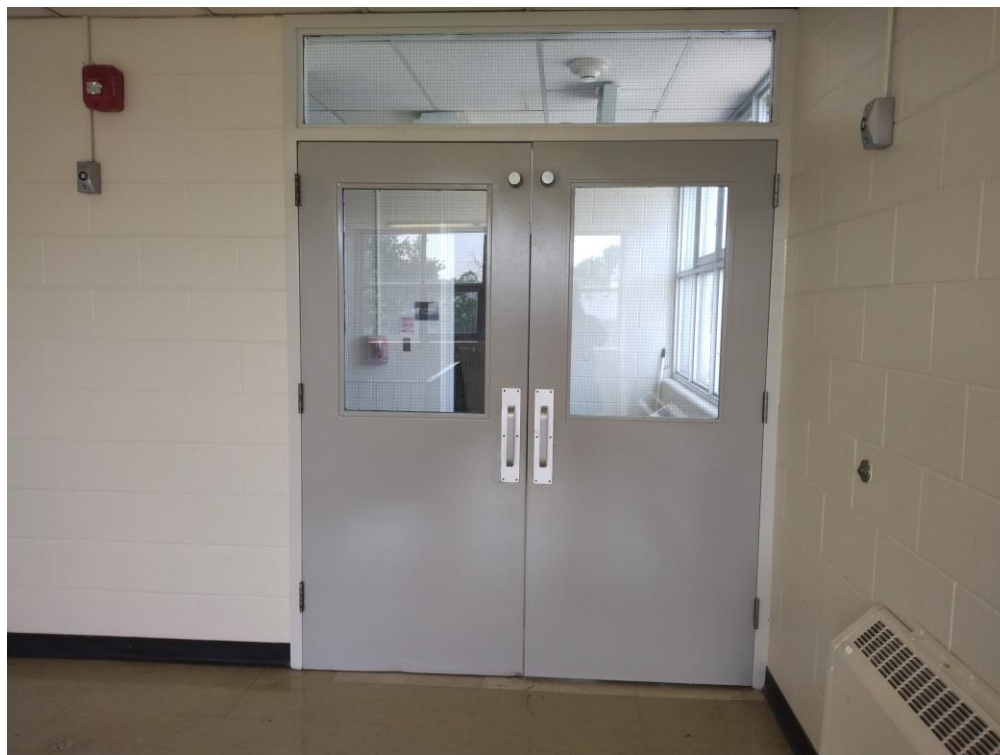
Photograph 7: Existing elevation for double door slab and frame replacement for door No. 30.



Photograph 8: Existing elevation for double door slab and frame replacement for door No. 40.



Photograph 9: Existing elevation for double door slab and frame replacement for door No. 66.



Photograph 10: Existing elevation for double door slab and frame replacement for door No. 97.

Appendix A



CONSULTANTS
Occupational Hygiene & Environment

PRE-RENOVATION HAZARDOUS BUILDING MATERIALS SURVEY

**Interior Door Replacement Project
Homelands Senior Public School**
2420 Homelands Drive
Mississauga, Ontario
L5K 1H2

Presented to:

Peel District School Board
933 Central Parkway West
Mississauga, Ontario
L5C 2T9

November 2023



OHE Project No.: 29259

Submitted by:

OHE Consultants
Occupational Hygiene & Engineering
311 Matheson Blvd. East
Mississauga, Ontario
L4Z 1X8

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APPENDIX B:	Results of Sampling and Testing for: Asbestos Lead
APPENDIX C:	Laboratory Analysis Reports
APPENDIX D:	Site Photographs
APPENDIX E:	Background Information on Designated Substances
APPENDIX F:	Summary of Applicable Regulations and Guidelines
APPENDIX G:	Methodologies
APPENDIX H:	Limitations of the Project
APPENDIX I:	Historical Data

OHE Consultants (OHE) was retained by Peel District School Board (PDSB) to conduct a Hazardous Building Materials Survey (HBMS) as part of the Interior Door Replacement Project at Homelands Senior Public School located at 2420 Homelands Drive, Mississauga, Ontario (herein referred to as the “Subject Location”).

The field work was carried out on October 31, 2023 by Muneeb Khan, Project Specialist, of OHE. The survey consisted of a visual inspection for the presence of hazardous building materials, including designated substances, and testing and sampling of materials suspected to contain hazardous building materials, particularly asbestos and lead.

The survey was limited to the areas associated with the Interior Door Replacement Project, as per drawings provided by PDSB.

Should suspect hazardous materials be discovered in any of the areas which could not be accessed (as part of the survey) during renovation and demolition activities, the work shall stop until such materials are assessed and sampled to determine the next course of action.

A summary of the hazardous building materials survey findings is presented below:

Asbestos

- Vinyl Floor Tiles (VFTs)

Lead

- Various paint colours
- May be present in: wiring connectors
 electric cable sheathing
 solder joints on copper piping.

Mercury

- Presumed present: as vapour in fluorescent light bulbs
 in mercury-vapour lamps
 as a component in electrical equipment, such as
 silent, position-dependent switches.

Silica

- Presumed present: as fillers for paints and mastic
 in bricks, ceramics, masonry, concrete and mortar.

Hazardous building materials may be present in areas not accessible for view and identification. In situations where hazardous building materials extend into a non-accessible area, the materials were assumed to also be present in those areas and have been reported as such. Contractors and maintenance personnel should be warned of the possibility of undisclosed hazardous building materials in enclosed areas. All hazardous building materials discovered in these areas should be treated as such until proven otherwise as per all applicable regulations and guidelines.

Hazardous building materials including asbestos are also assumed to be present in various building materials which were not sampled as part of the survey since they were excluded from the scope of work due to inaccessibility. These materials include, but are not limited to, fire-rated doors; elevator and lift brakes; high voltage wiring, transformers and associated equipment; mechanical packing, gaskets; and refractory materials within boilers and furnaces. All excluded materials shall be assumed asbestos-containing until proven otherwise by bulk sampling and analysis.

OHE's recommendations, based on the findings of the survey, are as follows:

- Provide a copy of this report to contractors bidding on or performing work within the Subject Location.
- Remove all asbestos-containing materials that are likely to be disturbed during renovation or demolition activities in accordance with all applicable guidelines and regulations.
- Renovations and/or demolition operations that are likely to generate lead-containing dust shall be carried out in accordance with all applicable guidelines and regulations.
- Renovations and/or demolition operations that are likely to disturb mercury-containing materials or equipment shall be carried out in accordance with all applicable guidelines and regulations.
- Renovations and/or demolition operations that are likely to generate silica-containing dust shall be carried out in accordance with all applicable guidelines and regulations.
- Disposal of hazardous building materials shall be completed as per all applicable guidelines and regulations.

- Should suspect hazardous building materials be discovered during any demolition or renovation work in the Subject Location, the contractor shall stop all work in the vicinity of the suspect hazardous material and immediately notify personnel from both Peel District School Board and OHE Consultants.

This executive summary provides a brief overview of the survey findings. It is not intended to substitute for the complete survey report, nor does it discuss specific issues documented in the report. The executive summary should not be used as a substitute to reading the complete report.

This report is not a scope of work/specifications document for the abatement/remediation of hazardous materials and shall not be used for such purposes.

1. INTRODUCTION

OHE Consultants (OHE) was retained by Peel District School Board (PDSB) to conduct a Hazardous Building Materials Survey (HBMS) as part of the Interior Door Replacement Project at Homelands Senior Public School located at 2420 Homelands Drive, Mississauga, Ontario (herein referred to as the “Subject Location”).

In accordance with Section 30 of the Ontario Occupational Health and Safety Act, Designated Substances and other potentially hazardous building materials must be identified prior to construction or demolition that may disturb such materials. The following is a list of designated substances:

Asbestos	Benzene
Lead	Acrylonitrile
Mercury	Coke Oven Emissions
Silica	Arsenic
Isocyanates	Ethylene Oxide
Vinyl Chloride	

The field work was carried out on October 31, 2023 by Muneeb Khan, Project Specialist, of OHE.

The asbestos bulk samples were analyzed by EMC Scientific Incorporated, an independent and NVLAP accredited laboratory.

The lead bulk samples were analyzed by EMSL Canada Inc., an independent and ELLAP accredited laboratory.

1.1 Scope of Work

The scope of work of the survey consisted of the following:

1. A review of previous environmental reports for the Subject Location (if provided prior to conducting the field work);
2. Meeting with key on-site personnel (if provided by the Client) to obtain information about the various operations and processes carried out at the Subject Location in the past;
3. Room-by-room inspection of accessible areas including spaces above suspended ceilings, access hatches, mechanical chases, or similar type locations. Minor demolition of walls, ceilings, floors, etc. to investigate concealed conditions was not part of the scope of work;
4. Bulk sampling and analysis of suspect materials for the presence of asbestos following the requirements of Ontario Regulation 278/05;
5. Sampling of accessible painted surfaces for lead content. The lead survey also included an inventory of paint that is peeling off and require remediation;
6. Visual inspection for the presence of the other hazardous building materials listed above. If identified, such materials were reported as suspected until tested. Testing of these materials was not part of the scope of this survey; and
7. Preparation and provision of this report which includes the methodologies, drawings (if they were initially provided by the Client), results, findings, conclusions, recommendations and site photographs.

This report is not a scope of work/specifications document for the abatement/remediation of hazardous materials and shall not be used for such purposes.

1.2 Appendices Outline

The following is an outline of the appendices included in the report:

- Drawings showing sampling locations and the locations of asbestos-containing materials (if identified) are presented in Appendix A;
- The **results** of the survey for asbestos and lead in the form of summary tables for each of the materials are presented in Appendix B;
- The laboratory analysis reports are presented in Appendix C;
- Select site photographs are presented in Appendix D;
- Background information on hazardous building materials, including a brief discussion of the properties, uses, and hazards associated with exposure, is attached in Appendix E;
- A summary of applicable provincial regulations and guidelines pertaining to hazardous building materials is attached in Appendix F;
- Survey methodology including bulk samples analysis methodology and assessment of hazardous building materials methodology is attached in Appendix G;
- Limitations of the project are attached in Appendix H; and
- Historical data (if applicable) is attached in Appendix I.

1.3 Building(s) Description

	Building 1
Name	Homelands Senior Public School
Address	2420 Homelands Drive, Mississauga, Ontario
Current usage	School
Square footage	Unknown
Number of Floors	Two
Number of Units	NA
Year Built	Unknown
Roof Mechanical penthouse (yes/no)	NA
Number of underground levels	NA
General interior finishes	Block walls, Suspended Ceiling Tiles (SCTs), Vinyl Floor Tiles (VFTs), etc.

NA = Not Applicable

2. FINDINGS AND DISCUSSION

2.1 ACMs

Material Description	Observed (yes/no)	Sample(s) Numbers	Asbestos % And Type	Friable/ Non-Friable	Condition	Location
Caulking, Grey	Yes	29259-1A-1C	ND			Around Door Frame, 1 st and 2 nd Floor
Block Wall, Mortar	Yes	29259-2A-2C	ND			Walls, 1 st and 2 nd Floor
Primer	Yes	29259-2A-2C	ND			Walls, 1 st and 2 nd Floor
12"x12" VFTs, Brown with Dark Brown and White Streaks	Yes	29259-3A-3C	1% Chrysotile	Non-Friable	Good	Floor, Near Door #97, 2nd Floor
Mastic, Black	Yes	29259-3A	ND			Underneath VFTs, Near Door #97, 2 nd Floor
12"x12" VFTs, Beige with Brown and White Streaks	Yes	29259-4A-4C	ND			Floor, 1 st and 2 nd Floor
Mastic, Brown	Yes	29259-5A-5C	ND			Between Baseboard and Walls, 1 st and 2 nd Floor
Block Wall, Sealant	Yes	29259-6A-6C	ND			Walls, 1 st and 2 nd Floor
12"x12" VFTs, Blue with Black and White Streaks	Yes	29259-7A-7C	ND			Floor, Corridor 180, Near Door #40 and Corridor 181, Near Door #30, 1 st Floor
Mastic, Black and Yellow	Yes	29259-7A-7C	ND			Underneath VFTs, Corridor 180, Near Door #40 and Corridor 181, Near Door #30, 1 st Floor
2'x4' SCTs, White with medium Fissures and Pinholes	Yes	29259-8A-8C	ND			Ceiling, 1 st and 2 nd Floor

Hazardous Building Materials Survey
Interior Door Replacement Project, Homelands Senior Public School
2420 Homelands Drive, Mississauga, Ontario
OHE Project No.: 29259
November 2023

Material Description	Observed (yes/no)	Sample(s) Numbers	Asbestos % And Type	Friable/ Non-Friable	Condition	Location
Putty, Black	Yes	29259-9A-9C	ND			Gap between Glass and Door Frame, Door #76, 2 nd Floor

ND – None Detected

A summary of the analysis of the bulk samples is presented in Table B.1 found in Appendix B.

ACMs were noted to be in good condition. Refer to the Table above for condition and location details.

2.2 Lead

Lead-containing paint was identified in various colours and at various locations at the Subject Location. A detailed description of the colours and locations is presented in Table B.2 found in Appendix B. It is assumed that the results presented apply to all paint(s) of the same colour.

Lead may be present in wiring connectors and electric cable sheathing, in lead piping, in solder joints on copper piping, in ceramic building products such as floor or wall tiles.

Prior to disturbance of lead-containing materials, the materials must be abated in accordance with applicable guidelines and regulations.

Where lead has been identified to be in fair condition, the materials should be repaired or removed in accordance with applicable guidelines and regulations.

2.3 Mercury

Mercury is presumed to be present as a vapour in fluorescent light bulbs and mercury-vapour lamps.

Mercury is presumed to be present as a component in electrical equipment, such as silent, position dependent switches.

2.4 Silica

Silica is presumed to be present in materials such as fillers for paints and mastic and in bricks, ceramics, masonry, concrete and mortar.

Silica-containing materials should be handled in accordance with applicable guidelines and regulations

2.5 Isocyanates

The material was not identified at the site and is not expected to be found.

2.6 Vinyl Chloride

The material was not identified at the site and is not expected to be found.

2.7 Benzene

The material was not identified at the site and is not expected to be found.

2.8 Acrylonitrile

The material was not identified at the site and is not expected to be found.

2.9 Coke Oven Emissions

The material was not identified at the site and is not expected to be found.

2.10 Arsenic

The material was not identified at the site and is not expected to be found.

2.11 Ethylene Oxide

The material was not identified at the site and is not expected to be found.

Hazardous building materials may be present in areas not accessible for view and identification. In situations where hazardous building materials extend into a non-accessible area, the materials were assumed to also be present in those areas and have been reported as such. Contractors and maintenance personnel should be warned of the possibility of undisclosed hazardous building materials in enclosed areas. All hazardous building materials discovered in these areas should be treated as such until proven otherwise as per all applicable regulations and guidelines.

3. RECOMMENDATIONS

OHE's recommendations, based on the findings of the survey, are as follows:

- Provide a copy of this report to contractors bidding on or performing work within the Subject Location.
- Remove all asbestos-containing materials that are likely to be disturbed during renovations or demolitions activities in accordance with the following regulations:
 - Ontario Regulation 278/05 (as amended) – “Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations” (O. Reg. 278/05);
 - Ontario Regulation 490/09 (as amended) – “Designated Substances” (O. Reg. 490/09);
 - Ontario Regulation 213/91 (as amended) – “Construction Projects” (O. Reg. 213/91);
 - Ontario Regulation 347/90 (as amended) – “General - Waste Management” (O. Reg. 347/90); and
 - The regulations respecting the Handling and Offering for Transport and Transport of Dangerous Goods.
- Removal of the asbestos-containing VFTs will require removal operation procedures as specified in O. Reg. 278/05 (Type 1 Operation).
- Renovations and/or demolition operations that are likely to generate lead-containing dust shall be carried out in accordance with the following guidelines and regulations:
 - Ontario Ministry of Labour Guideline: Lead on Construction Projects;
 - Designated Substances Regulation, O. Reg. 490/09;
 - Regulation for Construction Projects, O. Reg. 213/91; and
 - General – Waste Management Regulation, O. Reg. 347/90.
- Renovations and/or demolition operations that are likely to generate silica-containing dust shall be carried out in accordance with the following guidelines and regulations:

- Ontario Ministry of Labour Guideline: Silica on Construction Projects;
 - Designated Substances Regulation, O. Reg. 490/09;
 - Regulation for Construction Projects, O. Reg. 213/91; and
 - General – Waste Management Regulation, O. Reg. 347/90.
- Renovations and/or demolition operations that are likely to disturb mercury-containing materials or equipment shall be carried out in accordance with the following guidelines and regulations:
- Designated Substances Regulation, O. Reg. 490/09;
 - Regulation for Construction Projects, O. Reg. 213/91; and
 - General – Waste Management Regulation, O. Reg. 347/90.
- Disposal of hazardous materials shall be conducted in accordance with all applicable regulations and guidelines.
- Should suspect hazardous building materials be discovered during any demolition or renovation work in the above mentioned location, the contractor shall stop all work and immediately notify personnel from the Peel District School Board and OHE.

4. GENERAL STATEMENT OF LIMITATIONS

The information and opinions rendered in this report are for use exclusively by the Client and is subject to the terms, conditions and limitations as set out in the proposal/scope of work. OHE Consultants reserves the right to review and comment on any interpretation of the data or conclusions derived by the Client. OHE Consultants will not provide this report or other associated information to any party other than the Client unless the disclosure of the information is required by law or is requested in writing by the Client. Any required notifications (internal or external) about information contained in this report shall be the sole responsibility of the Client.

Nothing under the agreement (written or verbal) with the Client shall be construed to give any other rights or benefits to anyone other than the Client and OHE Consultants, and all duties and responsibilities undertaken pursuant to the agreement will be for the sole and exclusive benefit of the Client and OHE Consultants and not for the benefit of any other party. Client agrees not to disclose to any third party data, reports or information provided by OHE Consultants without prior written consent, and OHE Consultants shall have no liability to the Client for claims resulting from such disclosure. However, the Client may use the written report and associated documents to indicate the status of the property to current owners or government requiring the report.

OHE Consultants collected the information provided in this report for the benefit of its Client. OHE Consultants' Client may upon authorization release the information to third parties, who may use and rely upon this report to their discretion. Any use of, or reliance upon, the information by a party other than the Client shall be solely at the risk of the third party and without legal recourse against OHE Consultants.

The scope of this report is limited to possible hazardous building materials found within (or part of) the subject spaces included in the survey only. The survey only considered issues of the building structure, mechanical equipment, and their finishes. The survey did not consider current or past use of the property or occupant articles within the building (i.e. furniture, stock items, etc.), nor does it report on possible contaminants in the soil and groundwater of the site, vessels,

drums, underground storage tanks, etc. The survey consisted of accessible areas only; samples were not collected if accessibility was restricted.

OHE Consultants exercised normal skills of a reasonably qualified environmental consultant as part of obtaining the information presented in this report. The findings and conclusions contained herein have been made in accordance with generally accepted evaluation methods in the industry at the time of the performance of the work utilizing trained technical staff and professionals.

The information are only representative of the time period when the actual work was carried out. It is possible, due to the nature of building construction, that conditions may exist which could not be reasonably identified within the scope of the assessment or which were not apparent during the site investigation.

The information presented in the report shall not be construed as legal opinion. In addition, the information shall not be used to evaluate health risks of building occupants associated with exposure to identified hazardous building materials – such evaluations shall be carried out by a licensed medical professional who specializes in such evaluations. Over time, the regulations, standards and guidelines which are outlined in the report could be amended/updated, and accordingly may not apply at a future date.

No representation, warranties or guaranties, expressed or implied, are made with respect to any goods or services provided as part of this assessment/report, and any implied warranties or guaranties for a particular purpose are expressly disclaimed.

November 2023

OHE Consultants

Occupational Hygiene & Engineering

Original Signed by:

Original Signed by:

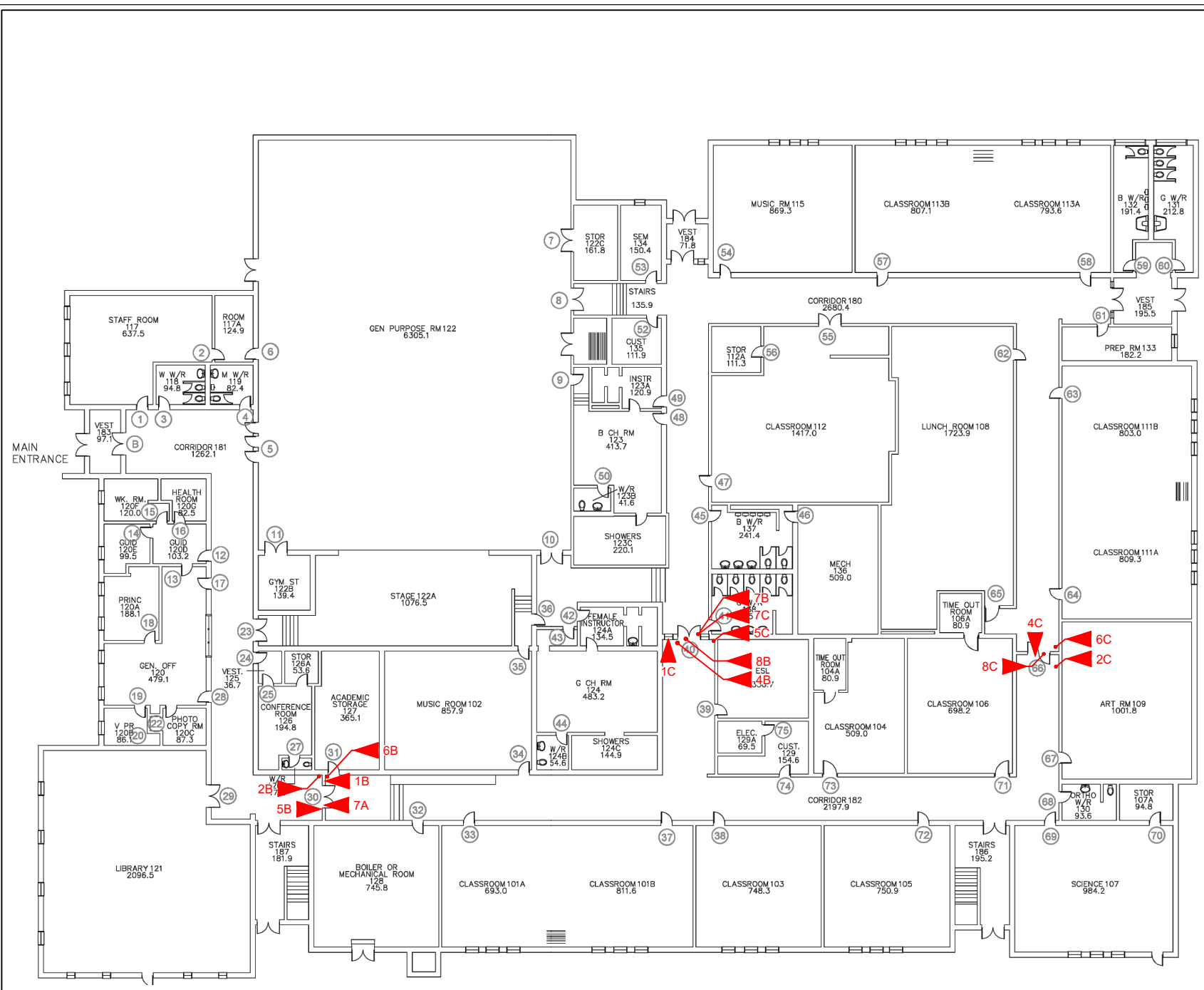
Prepared by:
Muneeb Khan
Project Specialist

Reviewed by:
Darren Kim
Project Manager

Original Signed by:

Michal Zitnik, M.H.Sc., ROH, CIH
Vice President

DRAWINGS



Legend:
 ✖▶ Asbestos Bulk Sample Location

Notes:
 Locations of site features are approximate and may vary from that shown.

Drawing Title:
 Asbestos Bulk Sample Locations

Client Address:
 Peel District School Board
 933 Central Parkway West
 Mississauga, Ontario

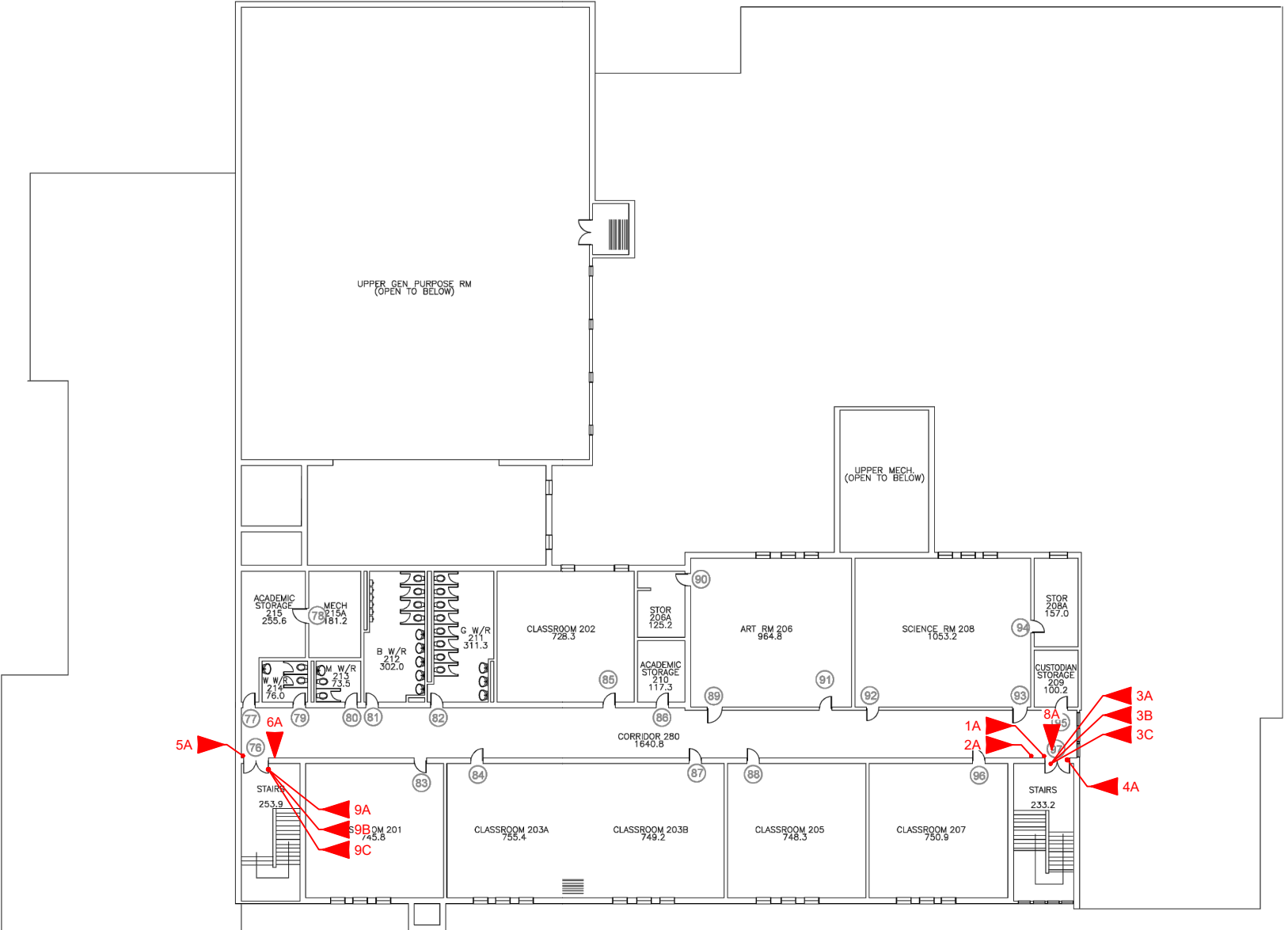
Project Location:
 First Floor
 Homelands Senior Public School
 2420 Homelands Drive
 Mississauga, Ontario

Project No: 29259

Date: Nov. 2023	Drawing No: 1.1
Scale: NTS	
Drawn By: MK	
Approved By: MZ	



Legend:
▶ Asbestos Bulk Sample Location



Notes:
Locations of site features are approximate and may vary from that shown.

Drawing Title:
Asbestos Bulk Sample Locations

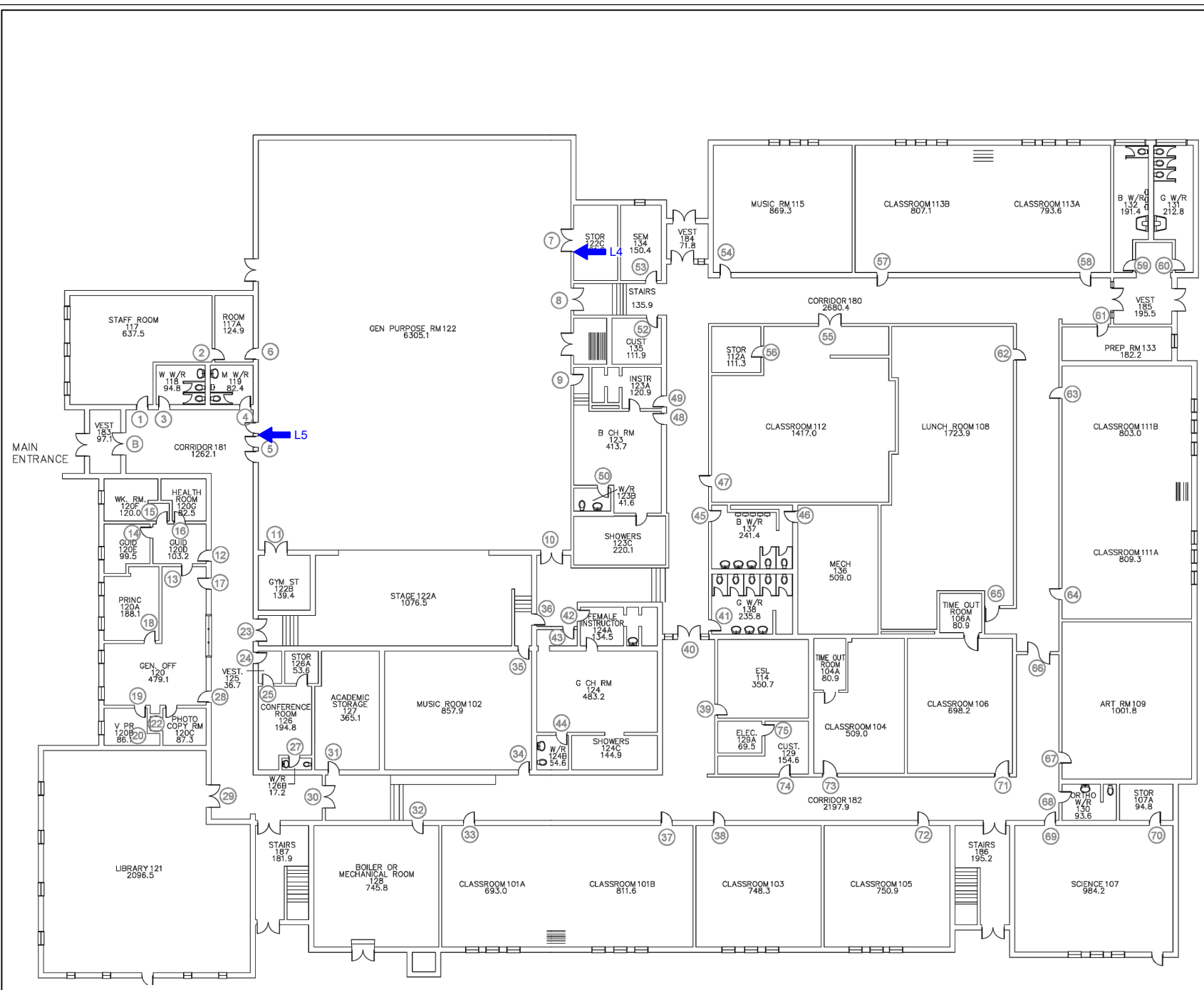
Client Address:
Peel District School Board
933 Central Parkway West
Mississauga, Ontario

Project Location:
Second Floor
Homelands Senior Public School
2420 Homelands Drive
Mississauga, Ontario

Project No: 29259

Date: Nov. 2023	Drawing No: 1.2
Scale: NTS	
Drawn By: MK	
Approved By: MZ	





Legend:
 Lead Bulk Sample Location

Notes:
 Locations of site features are approximate and may vary from that shown.

Drawing Title:
Lead Bulk Sample Locations

Client Address:
 Peel District School Board
 933 Central Parkway West
 Mississauga, Ontario

Project Location:
 First Floor
 Homelands Senior Public School
 2420 Homelands Drive
 Mississauga, Ontario

Project No: 29259



Date: Nov. 2023

Drawing No:

Scale: NTS

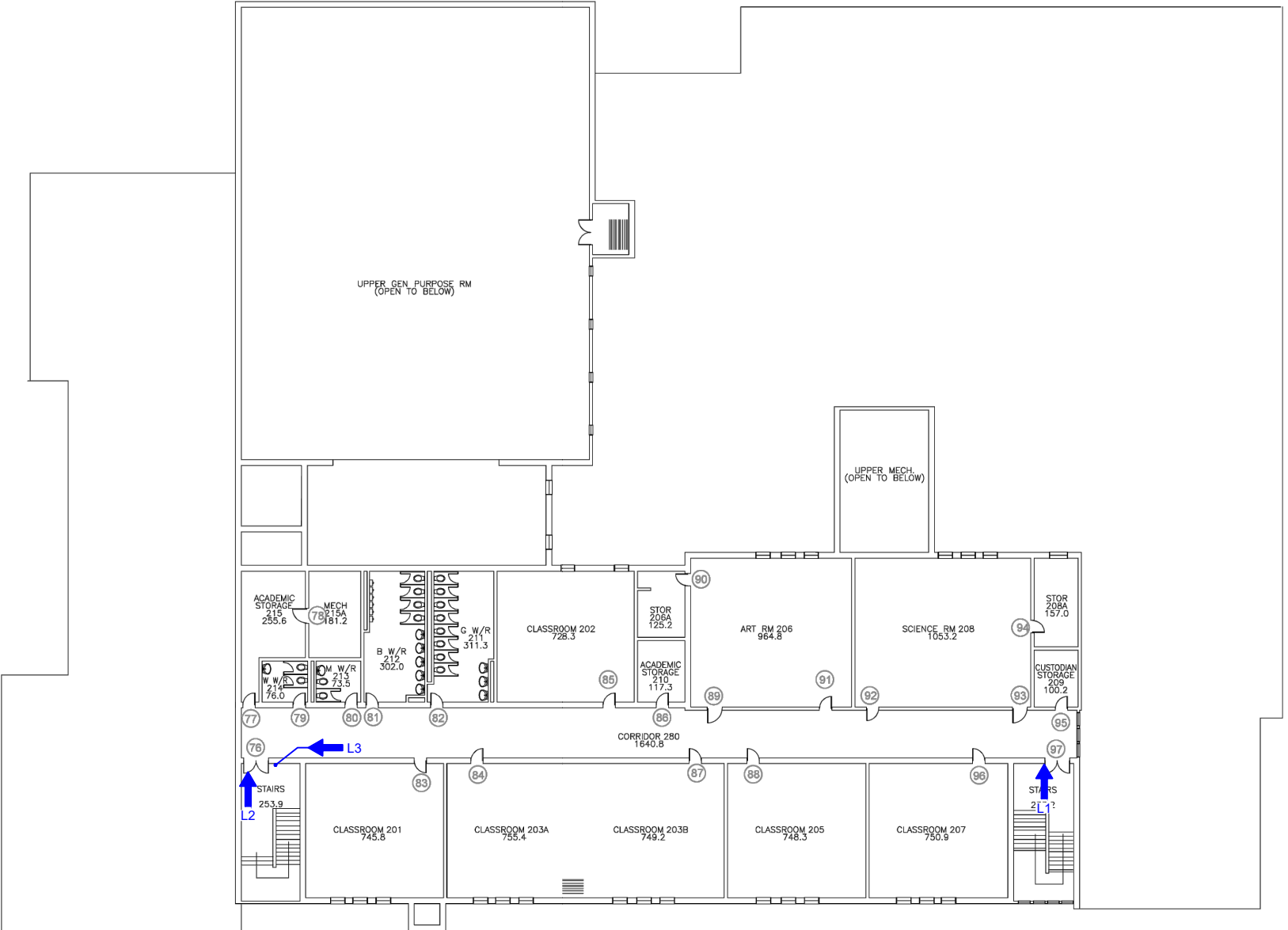
Drawn By: MK

2.1

Approved By: MZ



Legend:
Lx → Lead Bulk Sample Location



Notes:
Locations of site features are approximate and may vary from that shown.

Drawing Title:
Lead Bulk Sample Locations

Client Address:
Peel District School Board
933 Central Parkway West
Mississauga, Ontario

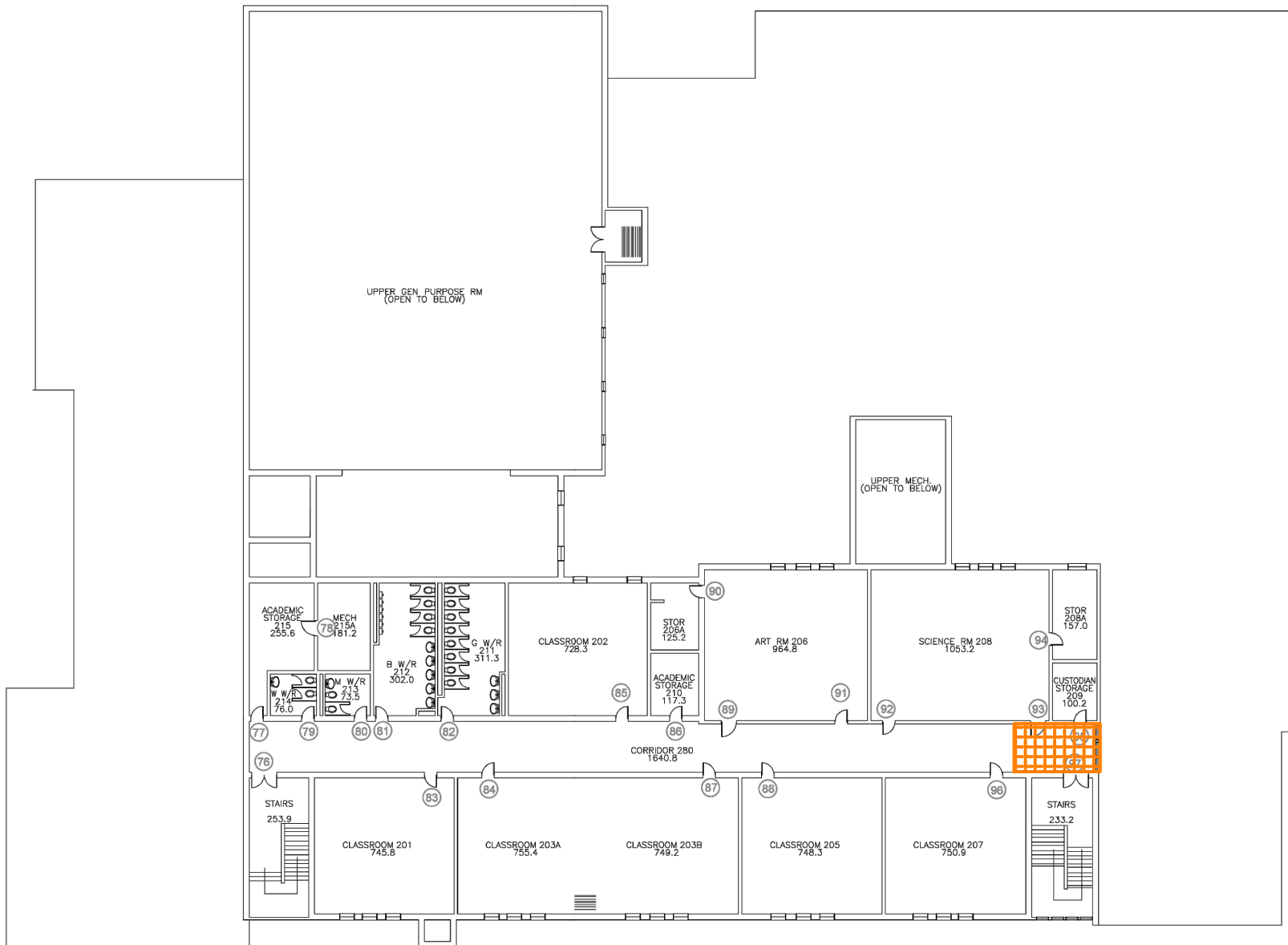
Project Location:
Second Floor
Homelands Senior Public School
2420 Homelands Drive
Mississauga, Ontario

Project No: 29259

Date: Nov. 2023
Scale: NTS
Drawn By: MK
Approved By: MZ

Drawing No:
2.2





Legend:

 Vinyl Floor Tiles (VFT)

Notes:
Locations of site features are approximate and may vary from that shown.

Drawing Title:

Non-Friable Asbestos-Containing Materials

Client Address:

Peel District School Board
933 Central Parkway West
Mississauga, Ontario

Project Location:

Second Floor
Homelands Senior Public School
2420 Homelands Drive
Mississauga, Ontario

Project No: 29259



Date: Nov. 2023

Drawing No:

Scale: NTS

Drawn By: MK

Approved By: MZ

3.1



RESULTS

Table B.1

Summary of Bulk Sample Analysis Results for the Presence of Asbestos by Polarized Light Microscopy (PLM) with Dispersion Staining

Collected on October 31, 2023

OHE Sample Number	Sample Description	Sample Location	Analysis Results (% and Type of Asbestos)
29259-1A	Caulking, Grey	Around Door Frame, Door #97, 2 nd Floor	None Detected
29259-1B	Caulking, Grey	Around Door Frame, Door #30, 1 st Floor	None Detected
29259-1C	Caulking, Grey	Around Door Frame, Door #40, 1 st Floor	None Detected
29259-2A	Block Wall, Mortar	South Wall, Corridor 280, Near Door #97, 2 nd Floor	None Detected
	Primer		None Detected
29259-2B	Block Wall, Block Mortar	North Wall, Corridor 181, Near Door #30, 1 st Floor	None Detected
	Primer		None Detected
29259-2C	Block Wall, Block Mortar	East Wall, Corridor 180, Near Door #66, 1 st Floor	None Detected
	Primer		None Detected
29259-3A	12"x12" Vinyl Floor Tiles (VFTs), Brown with Dark Brown and White Streaks	West Section Floor, Near Door #97, 2nd Floor	1% Chrysotile
	Black, Mastic		None Detected
29259-3B	12"x12" VFTs, Brown with Dark Brown and White Streaks	West Section Floor, Near Door #97, 2nd Floor	Not Analyzed (Stop Positive)
29259-3C	12"x12" VFTs, Brown with Dark Brown and White Streaks	West Section Floor, Near Door #97, 2nd Floor	Not Analyzed (Stop Positive)
29259-4A	12"x12" VFTs, Beige with Brown and White Streaks	East Section Floor, Near Door #97, 2 nd Floor	None Detected
	Yellow, Mastic		

OHE Sample Number	Sample Description	Sample Location	Analysis Results (% and Type of Asbestos)
29259-4B	12"x12" VFTs, Beige with Brown and White Streaks	West Section Floor, Corridor 182, Near Door #40, 1 st Floor	None Detected
	Yellow and Black, Mastic		None Detected
	Grey, Cementitious Material		None Detected
29259-4C	12"x12" VFTs, Beige with Brown and White Streaks	Floor, Corridor 180, Near Door #66, 1 st Floor	None Detected
	Off White, Caulking		
29259-5A	Mastic, Brown	Baseboard, West Wall, Corridor 280, Near Door #76, 2 nd Floor	None Detected
29259-5B	Mastic, Brown	Baseboard, East Wall, Corridor 181, Near Door #30, 1 st Floor	None Detected
29259-5C	Mastic, Brown	Baseboard, East Wall, Corridor 180, Near Door #40, 1 st Floor	None Detected
29259-6A	Block Wall, Sealant	South Wall, Corridor 280, Near Door #76, 2 nd Floor	None Detected
29259-6B	Block Wall, Sealant	North Wall, Corridor 182, Near Door #30, 1 st Floor	None Detected
29259-6C	Block Wall, Sealant	East Wall, Corridor 180, Near Door #66, 1 st Floor	None Detected
29259-7A	12"x12" VFTs, Blue with Black and White Streaks	South Section Floor, Corridor 181, Near Door #30, 1 st Floor	None Detected
	Black and Yellow, Mastic		
29259-7B	12"x12" VFTs, Blue with Black and White Streaks	East Section Floor, Corridor 180, Near Door #40, 1 st Floor	None Detected
	Black and Yellow, Mastic		
29259-7C	12"x12" VFTs, Blue with Black and White Streaks	East Section Floor, Corridor 180, Near Door #40, 1 st Floor	None Detected

OHE Sample Number	Sample Description	Sample Location	Analysis Results (% and Type of Asbestos)
29259-7C	Yellow, Mastic	East Section Floor, Corridor 180, Near Door #40, 1 st Floor	None Detected
29259-8A	2'x4' Suspended Ceiling Tiles (SCTs), White with medium Fissures and Pinholes	Ceiling, Corridor 280, Near Door #97, 2 nd Floor	None Detected
29259-8B	2'x4' SCTs, White with medium Fissures and Pinholes	Ceiling, Corridor 180, Near Door #40, 1 st Floor	None Detected
29259-8C	2'x4' SCTs, White with medium Fissures and Pinholes	Ceiling, Corridor 182, Near Door #66, 1 st Floor	None Detected
29259-9A	Putty, Black	Between Glass and Door, Door #76, 2 nd Floor	None Detected
29259-9B	Putty, Black	Between Glass and Door, Door #76, 2 nd Floor	None Detected
29259-9C	Putty, Black	Between Glass and Door, Door #76, 2 nd Floor	None Detected

Table B.2

Summary of Bulk Samples Analysis Results for the Presence of Lead by Flame Atomic Absorption Spectrometry (AAS)

Collected on October 31, 2023

OHE Sample Number	Sample Description	Sample Location	Contains Lead by weight (%)
29259-L1	Light Grey Paint	Door Frame, Door #97, 2nd Floor	0.015
29259-L2	Grey Paint	Door, Door #96, 2nd Floor	0.025
29259-L3	Cream Paint	North Wall, Stairwell, Near Door #76, 2 nd Floor	<0.0080
29259-L4	Brown Paint	Door Frame, Storage Room 117A, Door #7, 1st Floor	0.27
29259-L5	Black Paint	Door Frame, General Purpose Room 122, Door #5, 1st Floor	0.072

LABORATORY ANALYSIS REPORTS

Laboratory Analysis Report

To:

Fred Atrash
 OHE Consultants Inc.
 311 Matheson Boulevard East
 Mississauga, Ontario
 L4Z 1X8

EMC LAB REPORT NUMBER: A97474

Job/Project Name:

Analysis Method: Polarized Light Microscopy – EPA 600

Date Received: Nov 2/23

Date Analyzed: Nov 9/23

Analyst: Elizabeth Mierzynski

Reviewed By: Malgorzata Sybydlo

No. of Phases Analyzed: 36

Job No: 29259

Number of Samples: 27

Date Reported: Nov 9/23

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
29259-1A	A97474-1	Caulking, Grey/Around Door Frame, Door #97, 2nd Floor	Grey, caulking	ND		100
29259-1B	A97474-2	Caulking, Grey/Around Door Frame, Door #30, 1st Floor	Grey, caulking	ND		100
29259-1C	A97474-3	Caulking, Grey/Around Door Frame, Door #40, 1st Floor	Grey, caulking	ND		100
29259-2A	A97474-4 ⁵	Block Wall, Mortar/South Wall, Corridor 280, Near Door #97, 2nd Floor	2 Phases: a) White and off white, primer b) Grey, cementitious material	ND ND		100 100
29259-2B	A97474-5	Block Wall, Block Mortar/North Wall, Corridor 181, Near Door #30, 1st Floor	2 Phases: a) Off white, primer b) Grey, cementitious material	ND ND		100 100
29259-2C	A97474-6	Block Wall, Block Mortar/East Wall, Corridor 180, Near Door #66, 1st Floor	2 Phases: a) Off white, primer b) Off white and grey, cementitious material	ND ND		100 100
29259-3A	A97474-7	12"x12" Vinyl Floor Tiles (VFTs), Brown with Dark Brown and White Streaks /West Section Floor, Near Door #97, 2nd Floor	2 Phases: a) Beige, vinyl floor tile b) Black, mastic	Chrysotile ND	1	99 100
29259-3B	A97474-8	12"x12" VFTs, Brown with Dark Brown and White Streaks/West Section Floor, Near Door #97, 2nd	NA	NA		

EMC LAB REPORT NUMBER: A97474

Client's Job/Project Name/No.: 29259

Analyst: Elizabeth Mierzynski

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
		Floor				
29259-3C	A97474-9	12"x12" VFTs, Brown with Dark Brown and White Streaks /West Section Floor, Near Door #97, 2nd Floor	NA	NA		
29259-4A	A97474-10 ⁵	12"x12" VFTs, Beige with Brown and White Streaks/East Section Floor, Near Door #97, 2nd Floor	2 Phases: a) Off white, vinyl floor tile b) Yellow, mastic	ND ND		100 100
29259-4B	A97474-11	12"x12" VFTs, Beige with Brown and White Streaks/West Section Floor, Corridor 182, Near Door #40, 1st Floor	3 Phases: a) Off white, vinyl floor tile b) Yellow and black, mastic c) Grey, cementitious material	ND ND ND	2 2	100 98 98
29259-4C	A97474-12	12"x12" VFTs, Beige with Brown and White Streaks/Floor, Corridor 180, Near Door #66, 1st Floor	2 Phases: a) Off white, vinyl floor tile b) Off white, caulking	ND ND		100 100
29259-5A	A97474-13	Mastic, Brown /Baseboard, West Wall, Corridor 280, Near Door #76, 2nd Floor	Yellow, mastic	ND	2	98
29259-5B	A97474-14	Mastic, Brown/Baseboard, East Wall, Corridor 181, Near Door #30, 1st Floor	Yellow, mastic	ND	2	98
29259-5C	A97474-15	Mastic, Brown/Baseboard, East Wall, Corridor 180, Near Door #40, 1st Floor	Yellow, mastic	ND	2	98
29259-6A	A97474-16	Block Wall, Sealant/South Wall, Corridor 280, Near Door #76, 2nd	Off white, primer	ND		100

EMC LAB REPORT NUMBER: A97474

Client's Job/Project Name/No.: 29259

Analyst: Elizabeth Mierzynski

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
		Floor				
29259-6B	A97474-17	Block Wall, Sealant/North Wall, Corridor 182, Near Door #30, 1st Floor	Off white, primer	ND		100
29259-6C	A97474-18	Block Wall, Sealant/East Wall, Corridor 180, Near Door #66, 1st Floor	Off white, primer	ND		100
29259-7A	A97474-19	12"x12" VFTs, Blue with Black and White Streaks/South Section Floor, Corridor 181, Near Door #30, 1st Floor	2 Phases: a) Blue, vinyl floor tile b) Black and yellow, mastic	ND ND	2	98 100
29259-7B	A97474-20	12"x12" VFTs, Blue with Black and White Streaks/East Section Floor, Corridor 180, Near Door #40, 1st Floor	Phases: a) Blue, vinyl floor tile b) Black and yellow, mastic	ND ND	2	98 100
29259-7C	A97474-21	12"x12" VFTs, Blue with Black and White Streaks/East Section Floor, Corridor 180, Near Door #40, 1st Floor	Phases: a) Blue, vinyl floor tile b) Yellow, mastic	ND ND	2	98 100
29259-8A	A97474-22	2'x4' Suspended Ceiling Tiles (SCTs), White with medium Fissures and Pinholes/Ceiling, Corridor 280, Near Door #97, 2nd Floor	Grey, ceiling tile	ND	75	25
29259-8B	A97474-23	2'x4' SCTs, White with medium Fissures and Pinholes/Ceiling, Corridor 180, Near Door #40, 1st	Grey, ceiling tile	ND	75	25

EMC LAB REPORT NUMBER: A97474

Client's Job/Project Name/No.: 29259

Analyst: Elizabeth Mierzynski

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
		Floor				
29259-8C	A97474-24	2'x4' SCTs, White with medium Fissures and Pinholes/Ceiling, Corridor 182, Near Door #66, 1st Floor	Grey, ceiling tile	ND	75	25
29259-9A	A97474-25	Putty, Black/Between Glass and Door, Door #76, 2nd Floor	Black, caulking	ND		100
29259-9B	A97474-26	Putty, Black/Between Glass and Door, Door #76, 2nd Floor	Black, caulking	ND		100
29259-9C	A97474-27	Putty, Black/Between Glass and Door, Door #76, 2nd Floor	Black, caulking	ND		100

Note:

1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).
3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.
5. Phase b) is small in size.

**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 Or 552316911

CustomerID: 55OHEI93

CustomerPO: 29259

ProjectID:

Attn: **Fred Atrash**
OHE Consultants
311 Matheson Blvd. East
Mississauga, ON L4Z 1X8

Phone: (905) 890-9000
 Fax: (905) 890-9005
 Received: 11/1/2023 03:07 PM
 Collected:

Project: 29259

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
29259-L1 552316911-0001		11/3/2023	0.2508 g	0.0080 % wt	0.015 % wt
	Site: Light grey paint, Door Frame, Door #97, 2nd Floor				
29259-L2 552316911-0002		11/3/2023	0.1764 g	0.011 % wt	0.025 % wt
	Site: Grey paint, Door #76, 2nd Floor				
29259-L3 552316911-0003		11/3/2023	0.2507 g	0.0080 % wt	<0.0080 % wt
	Site: Cream paint, North wall, Stairwell, Near Door #76, 2nd Floor				
29259-L4 552316911-0004		11/3/2023	0.2517 g	0.0080 % wt	0.27 % wt
	Site: Brown paint, Door frame, Storage room 117A, Door #7, 1st Floor				
29259-L5 552316911-0005		11/3/2023	0.2205 g	0.0091 % wt	0.072 % wt
	Site: Black paint, Door frame, General purpose room 122, Door #5 1st Floor				

Rowena Fanto, Lead Supervisor
 or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

* Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA LAP, LLC-ELLAP Accredited #196142

Initial report from 11/08/2023 08:22:49

SITE PHOTOGRAPHS

Site Photographs
OHE Project No.: 29259

Photograph 1: View of asbestos-containing VFTs observed on the west section of the floor near Door #97 on the 2nd floor at the Subject Location.



Photograph 2: View of lead-containing light grey paint observed on the door frame on Door #97 on the 2nd floor at the Subject Location.



Photograph 3: View of lead-containing grey paint observed on Door #96 on the 2nd floor at the Subject Location.



Photograph 4: View of lead-containing brown paint observed on the door frame in Door #7 on the 1st floor at the Subject Location.



Site Photographs
OHE Project No.: 29259

Photograph 5: View of lead-containing black paint observed on the door frame on Door #5 on the 1st floor at the Subject Location.



**BACKGROUND INFORMATION ON
HAZARDOUS BUILDING MATERIALS**

ASBESTOS

Asbestos is a term applied to a family of fibrous minerals divided into two geological groups, serpentine and amphibole. These minerals are naturally occurring and are found in every mountain formation throughout the world. Only six forms of asbestos were used commercially. These are chrysotile, the only serpentine asbestos type, and amosite, crocidolite, anthophyllite, tremolite and actinolite which are the amphibole asbestos type.

There are over 3,000 separate uses of asbestos identified in existing literature. Uses are dependent upon the physical and chemical properties of a particular asbestos type. The desirable properties of asbestos fibres differ with each type of asbestos and include:

Fire retardance	Resistance to acids and alkalis	High tensile strength
Filter action	Thermal insulating qualities	Friction and wear resistance
Cohesion	Reinforcement	Filler

Asbestos is rarely found in pure form in a product and all products are divided into two broad categories: "friable materials" and "non-friable materials or manufactured products". "Friable materials" are defined as materials that, when dry, can be crumbled, pulverized or powdered by hand pressure. This classification includes materials such as sprayed fireproofing, thermal insulation applications, acoustical texturized material and refractory or non-friable materials that have been made to become friable through degradation.

"Non-friable materials" are generally hard and do not readily release fibres. Most asbestos-containing materials (ACMs) are found in this category and are typically included in materials such as cement products, felts, cloths, floor and roof coverings, friction products and ceiling tiles.

Asbestos fibres, when inhaled, may cause various respiratory diseases primarily including Asbestosis, Mesothelioma and Lung Cancer which all can cause an early death. Based on the health effects of exposure to asbestos fibres, the use of asbestos has become regulated across Canada and some products are now prohibited. Essentially, the location of ACMs must be identified and a written report kept and maintained of the ACMs locations so that work undertaken on these materials is conducted in a safe manner and any damaged ACMs or debris is repaired or removed.

LEAD

For thousands of years lead has been used industrially because of its poor conductive property. Lead has been commonly used for electric storage batteries, pigments, paints, and rubber compounds.

Health effects associated with lead exposure can result in damage to the kidneys, gastrointestinal system, nervous system and reproductive system. Symptoms range from vomiting, and abdominal cramps to pains in joints and muscles.

SILICA

Silica can be found naturally in two forms, crystalline or amorphous material. Crystalline silica is regulated due to its significant toxicity over the amorphous silica. The three most common forms of crystalline silica in the workplace are: quartz, cristobalite and tridymite. The physical properties of silica make it a valuable substance for use in a variety of different industries and processes such as an abrasive and scouring compound, fillers for paint and mastic and optical equipment. Health effects resulting from exposure to crystalline silica range from eye and skin irritation, coughing and sneezing to silicosis, a progressive lung disease.

**SUMMARY OF APPLICABLE
REGULATIONS AND GUIDELINES**

APPLICABLE REGULATIONS AND GUIDELINES

The following is a list of applicable regulations and guidelines:

Designated Substances

A Designated Substances report is completed to fulfil the Owner's requirements under Section 30 of the Ontario Occupational Health and Safety Act. A copy of the report must be provided to the general contractor who in turn must submit the report to all subcontractors prior to the commencement of demolition, construction or renovations.

Ontario Regulation 490/09 "Designated Substances" (O. Reg. 490/09) provides guidance on exposure monitoring, permissible exposure levels, medical monitoring, etc. for all Designated Substances in an industrial setting. There are no specific Ministry of Labour (MOL) regulations for control of the Designated Substances, with the exception of asbestos, on construction projects; however, the MOL actively enforces the general duty clause of the OHS Act to take all reasonable precautions in the circumstances of protection of a worker. It is important to note that Ontario Regulation 213/91 "Construction Projects" (O. Reg. 213/91) applies to construction projects and provides instruction on general requirements, safe work practices, reporting, etc.

ASBESTOS

Three regulations govern the control, handling, transport and disposal of asbestos in Ontario:

- Ontario Regulation 278/05 "Asbestos on Construction Projects and in Buildings and Repair Operations" made under OHS Act (O. Reg. 278/05);
- Ontario Regulation 347/90 "General – Waste Management" (as amended) made under the Environmental Protection Act (O. Reg. 347/90); and
- The regulations respecting "The Handling and Offering for Transport and Transporting of Dangerous Goods".

Ontario Regulation 278/05

Ontario Regulation 278/05 applies to buildings with regards to maintenance, renovations or demolition work where Asbestos-Containing Materials (ACMs) are or may be disturbed.

Under O. Reg. 278/05 a building owner must instate an Asbestos Management Program (AMP) for the building. The major requirements for the AMP including the following:

- Preparation and maintenance of a record of the location of asbestos-containing materials in the building;
- Notification of the building's tenants of the location of such material;
- Establishment of a training program for those employees of the owner who may work in close proximity to and disturb the material;
- Periodic inspection of the material to determine its condition;
- Remedial action on material that has deteriorated following the precautions and procedures prescribed by the regulation as Type 1, Type 2 and Type 3; and
- Removal of asbestos-containing materials to the extent practicable prior to demolition of a building or part thereof.

The regulation prescribes work to be conducted according to three procedure types. The procedure to be followed depends on the type of material and the regulation provides instruction on how the work must be performed.

Ontario Regulation 347/90

Ontario Regulation 347/90 applies to the disposal of all hazardous materials, including asbestos waste, from the location of generation to a landfill site. The regulation also prescribes procedures on how the asbestos waste is to be buried at the landfill site.

The major requirements to the building owner are to ensure that:

- The waste is appropriately packaged and labelled;
- The transport vehicle has an appropriate placard;
- The asbestos waste is transported on the same day as received by the landfill site; and
- The route of travel is the most direct.

The building owners are held responsible for their asbestos waste as prescribed in the regulation until it is accepted by the waste disposal site.

The regulations respecting the Handling and Offering for Transport and Transporting of Dangerous Goods.

These regulations govern the packaging mode of transport labelling, placards and documentation of waste while in transport. The labelling requirements differ from O. Reg. 347/90.

The major requirement to the building owner is to ensure the waste meets the packaging requirements and that a bill of lading accompanies the shipment.

LEAD

As stated previously there are no specific regulations regarding lead on construction projects; however, the MOL published a guideline entitled “Lead on Construction Projects” to raise the awareness of employers and workers to the hazards posed by lead in construction and the measures and procedures that should be taken to control those hazards.

The document provides information on the following:

- Health effects associated with lead exposure;
- Methods for controlling the lead hazard;
- Classification of work; and
- Measure and procedures for working with lead.

The guideline classifies operations involving lead-containing materials into three groups, Type 1, Type 2 and Type 3 operations. The procedure to be followed depends on the anticipated airborne concentration of lead generated during the operation, which is dependent on the type of work performed. The guideline also provides instruction on how the work must be performed.

SILICA

Again, there are no specific regulations regarding silica on construction projects; however, the MOL published a guideline entitled “Silica on Construction Projects” to raise the awareness of employers and workers to the hazards posed by silica in construction and the measures and procedures that should be taken to control those hazards.

- Health effects associated with silica exposure;
- Methods for controlling the silica hazard;
- Classification of work; and
- Measure and procedures for working with silica.

The guideline classifies operations involving silica-containing materials into three groups, Type 1, Type 2 and Type 3 operations. The procedure to be followed depends on the anticipated airborne concentration of silica generated during the operation, which is dependent on the type of work performed. The guideline also provides instruction on how the work must be performed.

METHODOLOGY

GENERAL SURVEY METHODOLOGY

The survey consisted of an extensive examination of accessible areas of the building to identify hazardous building materials. Suspected hazardous building materials were assessed based on the surveyor's knowledge regarding the historical use of hazardous building materials in buildings, through published data and through previous experiences.

Accessible is defined as an area above a suspended ceiling tile, within an access hatch or behind a closed door, not impeded by any structure, article or thing. An area enclosed by cement block, plaster, solid lumber, etc., where minor demolition is required to gain entry is considered non-accessible. The walkthrough survey was augmented with layout drawings where available.

OHE's surveyors completed a Room by Room sheet which details the findings in each room entered. The Room by Room sheet details the room number and/or room description including the materials observed in the room and the condition of the material. The Room by Room sheet also records sampling information, quantity of the material(s), accessibility of the material(s) and the recommended control action.

OHE's approach to the work followed accepted industry procedures as well as our own in-house protocols. The examination of materials was largely performed visually with some occasion where physical contact was necessary to assess the condition or examine for underlying layers.

ASBESTOS SURVEY METHODOLOGY

This following information summarizes the bulk sampling methodology, analysis methodology and the methodology used for the assessment of the condition of Asbestos-Containing Materials (ACMs).

Bulk Sampling Methodology

Bulk samples were collected for subsequent analysis during the building survey. A small volume of material (approximately one teaspoon full) was removed either from a damaged section of suspect material or cut out of intact material and then temporarily repaired by sealing with tape to prevent fibre release. Tools used in sample collection were washed after each use to prevent cross-contamination. Collected samples were placed in sealed plastic bags and shipped to an independent laboratory for analysis.

Bulk Sample Analysis Methodology

Bulk samples of suspect ACMs were analyzed in accordance with a US EPA method for the determination of asbestos content in bulk materials, EPA Method 600/R-93/116 as per requirements of O. Reg. 278 which specifies this method be used to establish

whether a material is considered to be an ACM (i.e., contains $\geq 0.5\%$ asbestos by dry weight) and for establishing its asbestos content and the type of asbestos.

The EPA Method requires that the samples be analyzed using the Polarized Light Microscopy (PLM) technique. The percentage of asbestos in the sample is measured as perceived by the analyst in comparison to standard area projections and is greatly influenced by the analyst's experience. The method is useful for the qualitative identification of asbestos (type) and the semi-quantitative (% estimates) determination of asbestos content in bulk samples.

The asbestos bulk samples were analyzed by an independent and NVLAP accredited laboratory. To ensure quality results, the independent laboratory chosen must successfully participate in an "Asbestos Proficiency Analytical Testing Program" and as such, this laboratory is responsible for their findings.

ASSESSMENT OF ACMS METHODOLOGY

The assessment of ACMs involves the evaluation of a number of factors by the surveyor including:

- Asbestos content
- Condition of the material
- Accessibility
- Water damage
- Activity and vibration
- Presence in air plenum/direct air stream

Where ACMs are found to be in good condition, firmly bound and not likely to deteriorate or fall, the recommended procedure is to evaluate the condition of the material on a periodic basis (which should be at least once every twelve-month period as required by O. Reg. 278/05 unless specified more frequently) in order to detect gradual deterioration. This process is referred to as an "Operation and Maintenance Program".

Damaged material is identified by surface crumbling, blistering, water stains, gouges, marring or being otherwise abraded. The accumulation of powder dust or debris similar in appearance to the suspect material can be used as confirmatory evidence.

In situations where the ACMs are found to have deteriorated or likely to fall, the following are the four abatement options that may be specified in this report:

Cleaning

The cleaning of asbestos-containing debris may be performed using a High Efficiency Particulate Air (HEPA) filter vacuum cleaner or by damp wiping techniques. All fallen asbestos material must be cleaned upon discovery. In situations where the material will

continue to fall due to deterioration, damage or abrasion, additional corrective work is required, i.e., the material must be repaired, permanently enclosed or removed.

Repairs

This option is usually selected in situations where damage to the ACMs are of a minor nature and is not likely to reoccur due to accessibility or activity. This method of repair is chosen in situations where performing the repair activities will not cause significant disturbance to the underlying material. Typical repairs include the repair of thermal insulation by the application of mastic (paint adhesive) to lagging (canvas cloth). The repair of sprayed fireproofing or acoustical texturized material can involve the application of an encapsulant to limited areas of abraded or damaged material. If this option is followed, the sprayed material must be capable of supporting the additional weight of the encapsulant.

Enclosure

An enclosure consists of the construction of a physical barrier, typically constructed from drywall or metal sheeting. This option is applicable in situations where the removal of materials with asbestos is not practicable, is of a high financial cost, or where damage is likely to occur without a protective barrier. Where the installation of the barrier is likely to disturb the ACMs, the work must be performed in isolation from the building's normal environment.

Removal

This option is recommended in situations where the ACMs are damaged beyond repair and the material is highly likely to be damaged due to nearby activities, by renovation or during demolition. The precautions employed may vary depending on the volume of the material to be removed and whether the material is friable or not. Typical programs can include the use of glove bags for limited amounts of thermal pipe insulation or minor amounts of fireproofing may be removed within a small polyethylene lined enclosure. For larger amounts of asbestos, more stringent protocols are used and consist of attached shower facilities, the establishment of a negative pressure differential, a filtration system for the air and monitoring for exposure to asbestos fibres.

LEAD-IN PAINT SURVEY METHODOLOGY

This following information summarizes the sampling and analysis methodology used during the survey for lead in paint.

Bulk Sampling Methodology

Bulk samples were collected for subsequent analysis during the building survey. A small volume of material (approximately one teaspoon full) was removed either from a damaged section of suspect material or removed from an inconspicuous area using clean hand tools. The collected samples were placed in sealed plastic bags and transported to an independent laboratory for analysis.

Bulk Sample Analysis Methodology

Bulk samples of suspect lead-containing materials were analyzed in accordance with a US EPA method for the determination of lead content in bulk materials, EPA Method (SW 846 3050B/7000B). The EPA Method requires that the samples be analyzed using the Flame Atomic Absorption Spectrometry (SW 846 3050B/7000B) technique. This method may be used determine trace elements in solution.

PROJECT LIMITATIONS

PROJECT LIMITATIONS

Hazardous building materials may be present in areas not accessible for view and identification. In situations where hazardous building materials extend into a non-accessible area, the materials were assumed to also be present in those areas and have been reported as such. Contractors and maintenance personnel must be warned of the possibility of undisclosed hazardous building materials in enclosed areas. All hazardous building materials discovered in these areas must be treated as a hazardous building material until proven otherwise by sampling and analysis as per all applicable regulations and guidelines.

Asbestos is assumed to be present in various building materials which were not sampled as part of the survey since they were excluded from the scope of work. These materials include, but are not limited to vermiculite in solid block walls; materials located above solid ceilings and in manufactured wall panels; elevator and lift brakes; high voltage wiring; mechanical packing, ropes and gaskets; exterior cladding, soffit and fascia boards on building; roofing materials,; caulking and mastic material; and paper and refractory materials within boilers. In cases of demolition and/or renovation, all excluded materials (i.e., suspected ACMs) shall be assumed asbestos-containing until proven otherwise by bulk sampling and analysis.

In cases where asbestos was identified in some but not all samples of similar materials, all such material was assumed and reported to contain asbestos. When a renovation is planned, we recommend a detailed sampling of suspected asbestos-containing material to confirm the presence of asbestos. Materials that are removed through renovations must be replaced with non-asbestos-containing materials only. This must be documented. Confirmatory sampling will not be required on any new products if the manufacturer supplies written confirmation that these materials are asbestos-free.

Mould impacted and water damaged building materials were observed in various locations throughout the Subject Location. The locations detailed in this report are based on the observations noted at the time of the site visit and can change over time and if the source of water intrusion is not corrected if site conditions change. For removal and/or repair operations, these areas should be confirmed on-site.

HISTORICAL DATA

INTENTIONALLY DELETED

Appendix B

Section 02080 Site Work - Asbestos Abatement

PART 1 – GENERAL

1.1 **General Conditions and Related Work**

- 1.1.1 This section forms a part of the Bid Document and should be read in conjunction with all other Sections and Divisions in order to comply with the requirements of the General Conditions of the Project.
- 1.1.2 It is the intent that work performed as outlined in this section will result in removal and disposal of all identified asbestos-containing materials, existing asbestos-contaminated materials, and materials that become contaminated by asbestos as a result of the work specified by this Section. The referenced materials include, but are not limited to asbestos-containing Vinyl Floor Tiles (VFTs).
- 1.1.3 Dispose of all waste as specified in applicable sections of the specifications document.
- 1.1.4 The Environmental Consultant may perform area and personal air sampling to verify effectiveness of dust suppression methods and adequacy of the respirators used by the Contractor. Contractor's personnel shall co-operate with the Environmental Consultant in collecting air samples.
- 1.1.5 This project and all work associated with it is regulated by The Occupational Health and Safety Act and other applicable regulations as follows:
- Ontario Regulation 278/05 (as amended) "Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations" (O. Reg. 278/05);
 - Ontario Regulation 213/91 (as amended) "Construction Projects" (O. Reg. 213/91); and
 - Ontario Regulation 347/90 (as amended) "General – Waste Management" (O. Reg. 347/90).
- 1.1.6 Protection of the building or components of the building is required.
- 1.1.7 Provide all equipment, material, services, supervision and labour required or specified to complete the scope of work of this project as described in the Project and Specifications Documents.
- 1.1.8 The Contractor shall be insured and possess all necessary requirements to perform Type 1, Type 2 and Type 3 Asbestos Abatement work in Ontario as stated in Ontario Regulation 278/05.

1.2 **Description of Work**

- 1.2.1 Before submitting a bid, confirm the scope of work of the project by visiting the site and reading the entire Bid documents. The information and any drawings presented should not be used as the only basis for submitting a bid.
- 1.2.2 **Work Area 1 – Door #97, 2nd Floor:** Work in this area shall be carried out following Type 1 Operation procedures as detailed in O. Reg. 278/05 (Section 02080, Sub-section 3.1), as follows:
- 1.2.2.1 Pre-clean the work area including floors, doors, windows and all other equipment and items present in the work area using vacuum units equipped with HEPA filters and wet wiping techniques.
- 1.2.2.2 Pre-clean and remove all moveable objects within the work area.
- 1.2.2.3 Seal all doors, windows, or other openings into the work area, with the application of rip-proof polyethylene (poly) sheeting and properly seal.
- 1.2.2.4 Remove and dispose of asbestos-containing VFTs in the area by Door #97, as required to accommodate the Interior Door Replacement Project. The removal shall be performed using non-powered tools, while wetting down the material.
- 1.2.2.5 All the waste generated in the work area shall be double bagged using asbestos labelled yellow bags and disposed as asbestos waste.

- 1.2.2.6 Half-face negative pressure respirators equipped with P-100 filter cartridges shall be worn as a minimum. The Environmental Consultant may perform area and personal air monitoring to verify effectiveness of dust suppression methods and adequacy of the respirators used by the contractor. Contractor's personnel shall co-operate with the Consultant in collecting air samples.
- 1.2.3 Restart all the systems present in the work area which were shut down to accommodate the abatement project. Ensure that the systems are operating in a manner that is similar to their operations prior to the abatement project.
- 1.2.4 Return the work area to as found condition.

1.3 **Definitions**

- 1.3.1 **Abatement:** Procedures to control fibre release from asbestos containing building materials. Includes encapsulation, enclosure, and removal.
- 1.3.2 **Amended Water:** Water containing a wetting agent or surfactant that is added for the purpose of reducing water surface tension to allow proper wetting of asbestos material.
- 1.3.3 **Asbestos:** The term includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite, and any of these that have been chemically treated and/or altered.
- 1.3.4 **Airlock:** A system for ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, consisting of two curtained doorways at least 6 feet apart.
- 1.3.5 **Area Monitoring:** Sampling of asbestos fibre concentrations within the asbestos control area and outside the asbestos control area which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone.
- 1.3.6 **Asbestos Work/Control Area:** An area where asbestos removal operations are performed which is isolated by physical boundaries to prevent the spread of asbestos dust, fibers, or debris.
- 1.3.7 **Air Monitoring:** The process of measuring the asbestos fibre content of a specific volume of air in a stated period of time.
- 1.3.8 **Asbestos Containing Material (ACM):** Any material analyzed and found to contain 0.5 percent or more asbestos either alone or mixed with other fibrous or nonfibrous materials.
- 1.3.9 **Asbestos Fibers:** For this specification, asbestos fibers are those fibers 5 microns or longer having an aspect ratio of at least 3:1.
- 1.3.10 **Authorized Person:** The building Owner or his representative, persons of any regulatory or other agency having jurisdiction over the project and the asbestos abatement Environmental Consultant or his representative.
- 1.3.11 **Barrier:** Any surface that closes up the work area to prevent the movement of fibres.
- 1.3.12 **Curtained Doorway:** A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, constructed by placing two overlapping sheets of rip-proof plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. The free bottom edge of the plastic sheets shall be weighted to ensure proper closure. The plastic sheets shall overlap by no less than 1.5 meters.
- 1.3.13 **Critical Barrier:** One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.
- 1.3.14 **Contractor/Supervisor:** An individual who supervises asbestos abatement work and has the proper qualifications and training as specified in this document.

- 1.3.15 Disposal: Procedures necessary to transport and deposit the asbestos contaminated material stripped and removed from the building, piping, and equipment in an approved waste disposal site in compliance with the applicable environmental regulations.
- 1.3.16 Demolition: The razing, removing or wrecking of any building component, assembly or system together with any associated handling operations.
- 1.3.17 Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.
- 1.3.18 Dispersed Oil Particulate (DOP) Test: A test method that uses Dispersed Oil Particulate aerosol to challenge a HEPA filter-equipped negative pressure unit to determine its integrity and effectiveness to filter out asbestos fibres.
- 1.3.19 Emery 3004 – a compound (a poly-alpha olefin) that may be substituted for DOP in HEPA filter testing.
- 1.3.20 Encapsulant: A liquid material which can be applied to asbestos containing material and which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). A third type of encapsulant (removal encapsulant) is a penetrating encapsulant and is designed to be applied during the removal of asbestos-containing materials to minimize the release of fibres.
- 1.3.21 Disposal Bag: A 0.15 mm 6 mil thick, leak-tight plastic bag, pre-labeled as containing asbestos waste and used for transporting asbestos waste from containment to disposal site.
- 1.3.22 Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM.
- 1.3.23 Encapsulation: Procedures necessary to coat all asbestos-containing materials with an encapsulant to control the possible release of asbestos fibers into the ambient air.
- 1.3.24 Enclosure: All herein specified procedures necessary to complete enclosure of all asbestos containing material behind airtight, impermeable, permanent barriers.
- 1.3.25 Equipment Room: A contaminated area or room which is part of the worker decontamination enclosure system, with storage for contaminated clothing and equipment.
- 1.3.26 Friable Asbestos Material: Material that when dry can be crumbled, pulverized or powdered by hand pressure and includes material that is crumbled, pulverized or powdered.
- 1.3.27 Filtration System for Water: A multistage system for filtering water from the decontamination shower and wastewater. The system is usually manufactured with two filters: a primary filter and a secondary filter. The primary filter collects and retains particles that are 20 microns or larger and the secondary filter removes particles that are 5 microns or larger.
- 1.3.28 Glove Bag System: A portable asbestos abatement system designed for the isolation of an object from which materials containing asbestos are to be removed.
- 1.3.29 HEPA Filter Equipment: High efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be capable of trapping and retaining at least 99.97 percent of 0.3 micrometer diameter particles.
- 1.3.30 Negative Pressure Fan System: An air purifying fan system located within or outside the isolated work area, which draws air out of the work area through a HEPA filter and discharges this air directly to the exterior of the building, thus keeping the static air pressure in the work area lower than in adjacent areas and preventing infiltration of contaminated air from work area to adjacent areas. This system shall be equipped with an alarm to warn of system breakdown, shall maintain a minimum pressure differential of 0.02" water gauge relative to adjacent areas outside of work areas and shall be equipped with an instrument to continuously monitor and automatically record pressure differences.

- 1.3.31 Non-friable Asbestos Material: Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not release fibers during any appropriate use, handling, demolition, storage, transportation, processing, or disposal.
- 1.3.32 Negative Pressure Respirator: A respirator in which the air inside the respiratory inlet covering is negative during inhalation in relation to the air pressure of the outside atmosphere and positive during exhalation in relation to the air pressure of the outside atmosphere.
- 1.3.33 Powered Air Purifying Respirator (PAPR): A full-face mask into which filtered air is pumped at approximately 100 – 150 litres per minute (4 – 6 cubic feet per minute). The PAPR consists of a full-face mask, a battery pack, an air pump, high efficiency filter and hoses.
- 1.3.34 Personal Monitoring: Sampling of asbestos fibre concentrations within the breathing zone (within 12 inches of the mouth) of an employee.
- 1.3.35 Personnel: Supervisors, Contractor employees, subcontractor employees.
- 1.3.36 Positive Pressure Respirator: A respirator that maintains a positive pressure inside the facepiece during inhalation and exhalation in relation to the atmospheric pressure.
- 1.3.37 Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold or warm running water and arranged for complete showering during decontamination. The shower room comprises an airlock between contaminated and clean areas.
- 1.3.38 Supplied-air respirator – an accepted respirator and air-supply hose with a hood/helmet, a tight fitting facepiece that is supplied with compressed breathing air from a compressed breathing air system.
- 1.3.39 Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- 1.3.40 Tape-Sealed Polyethylene Sheets: Rip-proof polyethylene sheets or polyethylene sheets of type and thickness as specified, sealed with tape along the edges, around objects, over cuts and in other locations as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage and damage by sealant and to prevent the escape of asbestos fibres through the sheeting into a clean area.
- 1.3.41 Wet Cleaning: The process of eliminating asbestos from building surfaces and objects by using cloths, mops, or other cleaning tools dampened with water.
- 1.3.42 Work Decontamination Enclosure System: A decontamination system for workers, consisting of a clean room, a shower room, and an equipment room. One entrance to the clean room shall be outside of the contaminated area. One entrance to the equipment room shall be connected directly to the contaminated area.
- 1.3.43 Work: Includes all labour, supervision, materials and equipment required for the complete execution of the project as specified in the project.

1.4 Work Schedule

- 1.4.1 It is the responsibility of the contractor to provide the necessary manpower and work shifts to meet the schedule as specified below:
- 1.4.2 The Owner and the project management team shall determine the schedule and the start date for the project.
- 1.4.3 The Contractor shall, at no extra cost to the owner, be responsible for the completion of work required or scheduled to be performed on weekends, holidays and after regular hours and shall be carried out as required to meet the schedule specified.
- 1.4.4 In all situations where the Contractor fails to meet the specified schedule, the Contractor shall pay all costs of inspection and air monitoring by the Environmental Consultant.

1.5 Submittals

- 1.5.1 All submittals must be received by the Client or their representative before the work is allowed to commence.
- 1.5.2 The Contractor shall submit the following:
 - 1.5.2.1 Proof that the Contractor has made arrangement for the transport and disposal of asbestos waste. The proof shall be satisfactory to the Environmental Consultant.
 - 1.5.2.2 Name of the landfill.
 - 1.5.2.3 A copy of the weight scale or waste manifest/bill of lading (once received).
 - 1.5.2.4 Proof satisfactory to the Environmental Consultant that each Supervisor scheduled to work on the project has successfully completed an approved asbestos abatement course and can provide an up to date training certificate issued by an experienced entity.
 - 1.5.2.5 References that each and every supervisor had supervised a minimum of 7 other asbestos removal projects of similar size and scope. One supervisor shall remain on site while asbestos removal or cleanup is being carried out.
 - 1.5.2.6 Copies of Insurance certificates and Workplace Safety and Insurance Board status.
 - 1.5.2.7 Proposed work schedule.
 - 1.5.2.8 Work force expected to be present on site daily.
 - 1.5.2.9 Proposed number of shifts.
 - 1.5.2.10 Layouts of proposed platforms and hoardings for the Environmental Consultant's review and approval.
 - 1.5.2.11 Proof that all workers have received Workplace Hazardous Material Information System (WHMIS) training.
 - 1.5.2.12 A WHMIS information package containing documentation addressing test results, flammability and fire data and Material Safety Data Sheets (MSDSs) for products, chemicals and materials used on site during the course of the asbestos abatement project.
 - 1.5.2.13 Proof satisfactory to the Environmental Consultant that each worker scheduled to work on the project has successfully completed an approved asbestos abatement course and can provide an up to date training certificate issued by an experienced entity.
 - 1.5.2.14 Proof satisfactory to the Environmental Consultant that each worker scheduled to work on the project has been fit tested for the appropriate respirator to be used (if any).
- 1.5.2.15 Code of practice for respiratory protection.

1.6 Quality Assurance

- 1.6.1 Ensure that work progresses according to schedule.
- 1.6.2 Ensure that work complies with all the requirements of the applicable regulations, guidelines and manuals.
- 1.6.3 Ensure that no water runoff or airborne asbestos material contaminates areas outside the asbestos removal work area enclosures. The Environmental Consultant has been given authorization by the Owner to stop any work where contamination of areas outside enclosures are suspected. The Contractor shall be responsible for all costs to rectify the problem.
- 1.6.4 Use only skilled and qualified workers for all trades required to work on this project.

- 1.6.5 Only the asbestos abatement Contractor, and never the Environmental Consultant, is responsible for the following:
- 1.6.6 Safety programs and precautions required by applicable regulations for the work being performed.
- 1.6.7 Control over the acts and omissions of the Contractor's workers, agents, subcontractors and other employees of the Contractor required to perform work on the project.
- 1.6.8 Control over construction techniques, methods, means or procedures.

1.7 Regulations

- 1.7.1 The Contractor shall comply with all local, provincial and federal requirements relating to asbestos and other work being carried out.
- 1.7.2 In case of conflict among the above mentioned requirements or with these specifications, the more stringent requirements shall apply.
- 1.7.3 Perform work following the requirements of the various regulations in effect at the time the work is being carried out.
- 1.7.4 The regulations shall include, but are not limited to:
 - 1.7.4.1 Ontario Regulation 490/09 (as amended) " Designated Substances" (O. Reg. 490/09);
 - 1.7.4.2 Ontario Regulation 278/05 (as amended) " Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations" (O. Reg. 278/05);
 - 1.7.4.3 Ontario Regulation 213/91 (as amended) "Construction Projects" (O. Reg. 213/91); and
 - 1.7.4.4 Ontario Regulation 347/90 (as amended) "General – Waste Management" (O. Reg. 347/90); and
- 1.7.5 WHMIS Regulations.

1.8 Supervision

- 1.8.1 The Contractor shall provide a trained and qualified shift supervisor for each and every shift during which asbestos removal and clean-up is being carried out. The Owner reserves the right to stop all work if this requirement is not complied with, at no additional charge to the Owner.
- 1.8.2 The shift supervisor shall have the authority to make decisions and take actions with respect to production, manpower and equipment.
- 1.8.3 Obtain approval from the Owner of his representative before replacing supervisory personnel.
- 1.8.4 At the request of the Owner or his representative, the Contractor shall, without asking for explanation, replace supervisory personnel with 2 days from receiving the Owner's written request.

1.9 Notifications

- 1.9.1 The Contractor shall be responsible for immediately notifying the following, orally and in writing, prior to any work on this project commencing:
 - 1.9.2 Ontario Ministry of Labour, Construction Health and Safety branch closest to the location of the project.
 - 1.9.3 The land fill site which agreed to accept the waste as per the requirements of regulation 558/00.
 - 1.9.4 The Fire Marshall, in cases were the execution of the work will result in blocking building exists or when turning off, removing or temporarily altering fire alarms.

1.10 Proscriptions

- 1.10.1 The use of motorized lift equipment in the work area is not allowed.
- 1.10.2 The use of compressed air for removal or clean-up of asbestos dust and debris from any surface is not allowed.
- 1.10.3 Smoking, eating, drinking or chewing is not allowed in the work area.
- 1.10.4 Unauthorized persons or persons not using proper personal protective equipment shall not be allowed to enter the work area.
- 1.10.5 No entry into the work area shall be permitted to any person who has facial hair growth that prevents the establishment of a proper seal between the respirator and the skin.
- 1.10.6 The use of torches, propane-fired heaters and other open flames shall not be permitted in the asbestos removal work area.

1.11 *Equipment and Material Protection and Replacement*

- 1.11.1 Before starting the removal operations, the Contractor shall perform a survey to document existing damage in all areas where asbestos removal will be carried out or in areas where transportation of waste will take place.
- 1.11.2 The Contractor shall be responsible for protecting all equipment and materials within, and in the vicinity of, the work area.
- 1.11.3 The Contractor shall be responsible for replacing all equipment and materials that become damaged as a result of the work being carried out by the Contractor at no additional cost to the owner.

1.12 *Worker and Visitor Protection*

- 1.12.1 Instruct all personnel (workers and visitors) in all aspects of work procedures and protective equipment before allowing entry into the asbestos abatement work areas.
- 1.12.2 An experienced person (as defined by the Occupational Health and Safety Act) shall provide all the training and instructions.
- 1.12.3 Instructions and training shall include, but shall not be limited to, the following:
 - 1.12.4 Entry and exit from asbestos abatement work areas.
 - 1.12.5 Work practices and personal hygiene.
 - 1.12.6 The use, cleaning and care of respirators and protective clothing.
 - 1.12.7 Protective measures and work procedures.
 - 1.12.8 Asbestos work area entry and exit procedures shall be posted in the clean room of the decontamination unit.
 - 1.12.9 Respiratory Protection:
 - 1.12.10 All personnel required to wear respirators shall be fit tested either by a qualitative or quantitative fit testing method administered by a qualified entity.
 - 1.12.11 Each worker or visitor required to enter an asbestos abatement work area shall be provided with a personally issued respirator that is:
 - 1.12.12 Appropriate for the work that is being carried out.
 - 1.12.13 Acceptable to the Ministry of Labour, Occupational Health and Safety Division.
 - 1.12.14 The worker shall be responsible for wearing a respirator that is issued by the Contractor.
 - 1.12.15 The following criteria, as outlined in Table 1 of O. Reg. 278/05, shall be followed when selecting an appropriate respirator:

Table 1: Respirators (O. Reg. 278/05)

Column 1		Column 2
Work Category		Required respirator
Type 1 Operations		
Worker requests that the employer provide a respirator to be used by the worker, as described in paragraph 12 of section 14		Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter
Type 2 Operations		
Work described in paragraph 1 of subsection 12 (3)		One of the following: <ul style="list-style-type: none"> - Air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filter - Powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, P-100 or R-100 particulate filter - Negative pressure (demand) supplied air respirator equipped with a full-facepiece - Continuous flow supplied air respirator equipped with a tight fitting facepiece (half or full-facepiece)
Work described in paragraphs 2 to 7 and 9 to 11 of subsection 12 (3)		Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter
Type 3 Operations		
Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable material containing asbestos by means of power tools, if the tool is attached to a dust collecting device equipped with a HEPA filter as described in paragraph 8 of subsection 12 (3)	Material is not wetted	One of the following: <ul style="list-style-type: none"> - Air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filter - Powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, P-100 or R-100 particulate filter - Negative pressure (demand) supplied air respirator equipped with a full-facepiece - Continuous flow supplied air respirator equipped with a tight fitting facepiece (half or full-facepiece)
Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable material containing	Material is wetted to control spread of fibre Material is not wetted	Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter Pressure demand supplied air respirator equipped with a half mask

Table 1: Respirators (continued)

Column 1		Column 2
Work Category		Required respirator
Type 3 Operations		
asbestos by means of power tools, if the tool is not attached to a dust collecting device equipped with a HEPA filter as described in paragraph 5 of subsection 12 (4)	Material is wetted to control spread of fibre	<p>One of the following:</p> <ul style="list-style-type: none"> - Air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filter - Powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, P-100 or R-100 particulate filter - Negative pressure (demand) supplied air respirator equipped with a full-facepiece
		<ul style="list-style-type: none"> - Continuous flow supplied air respirator equipped with a tight fitting facepiece (half or full-facepiece)
Work with friable material containing asbestos, as described in paragraphs 1 to 4 and 6 of subsection 12 (4)	Material is not wetted	Pressure demand supplied air respirator equipped with a full facepiece
Work with friable material, as described in paragraphs 1 to 4 and 6 of subsection 12 (4), that contains a type of asbestos other than chrysotile	Material was applied or installed by spraying, and is	Pressure demand supplied air respirator equipped with a half mask
Work with friable material, as described in paragraphs 1 to 4 and 6 of subsection 12 (4), that contains only chrysotile asbestos	wetted to control spread of fibre	<p>One of the following:</p> <ul style="list-style-type: none"> - Air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filter - Powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, P-100 or R-100 particulate filter - Negative pressure (demand) supplied air respirator equipped with a full-facepiece - Continuous flow supplied air respirator equipped with a tight fitting facepiece (half or full-facepiece)
Work with friable material containing asbestos, as described in paragraphs 1 to 4 and 6 of subsection 12 (4)	Material was not applied or installed by spraying, and is wetted to control spread of fibre	<p>One of the following:</p> <ul style="list-style-type: none"> - Air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filter - Powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, P-100 or R-100 particulate filter - Negative pressure (demand) supplied air respirator equipped with a full-facepiece - Continuous flow supplied air respirator equipped with a tight fitting facepiece (half or full-facepiece)

- 1.12.16 Respiratory protection systems shall be certified by the National Institute for Occupational Safety and Health (NIOSH) or any other testing agency that is acceptable to the Ministry of Labour.
- 1.12.17 Respirator shall be stored in a clean location such as the clean room of the decontamination unit. This room can also be used for charging PAPR batteries.
- 1.12.18 The procedures specified by the equipment manufacturer shall be followed while using and maintaining the respirators.
- 1.12.19 Respirators shall be cleaned and inspected at the end of each shift. All damaged and deteriorated parts found during the inspection shall be replaced before the respirator is used again.
- 1.12.20 Appropriate combination cartridges shall be used if substances other than asbestos are to be handled inside the asbestos removal work area.
- 1.12.21 Used filters shall be tested and replaced as specified by the manufacturer or as specified below. The more stringent testing and replacement protocol shall be followed.
- 1.12.22 Cartridges for negative pressure respirators should be replaced every 16 hours of actual usage
- 1.12.23 Cartridges for PAPRs should be replaced every 8 hours.
- 1.12.24 Cartridges shall be treated as asbestos waste and shall be disposed of accordingly after usage inside an asbestos removal work area.
- 1.12.25 Protective Clothing:
- 1.12.26 The Contractor shall provide every worker and authorized visitor with full body disposable coveralls.
- 1.12.27 All personnel shall wear the protective coveralls before they are allowed to enter into the asbestos removal work area.
- 1.12.28 Coveralls shall be equipped with head covering (hood), foot covering and tight fitting cuffs at the neck, ankles and wrists.
- 1.12.29 The disposable coveralls shall be made up of materials that does not readily permit the penetration of asbestos fibers.
- 1.12.30 Disposable coveralls shall be immediately repaired (using duct tape) or replaced once torn.
- 1.12.31 Coveralls shall be disposed of as asbestos waste once they are worn inside an asbestos abatement area.
- 1.12.32 Workers are allowed to wear reusable protective clothing provided that the clothing is left in the equipment room until the end of the asbestos abatement project. The clothing shall then be disposed of as asbestos waste.
- 1.12.33 Safety shoes, hard hats and additional body protection equipment shall be used as necessary to meet the requirements of applicable safety regulations.

1.13 Inspections

- 1.13.1 The asbestos abatement Environmental Consultant will be present on site to carry out quality control inspections for the entire duration of the project. The inspections will be performed inside and outside the work areas.
- 1.13.2 The purpose of the inspections is to ensure that the work is being carried out following the requirements and procedures outlined in the specifications documents and applicable regulations.
- 1.13.3 The Environmental Consultant will issue written instructions to the asbestos abatement Contractor throughout the duration of the project. The instructions will authorize the Contractor to proceed to next phase of work. The general phases of work will consist of the following: Pre-cleaning, set-up and preparation of the work area, removal of specified materials, clean-up of work area and tear down of containment.

- 1.13.4 The Contractor shall not proceed to the next phase of work without obtaining authorization from the Environmental Consultant.
- 1.13.5 The Environmental Consultant has been given authorization by the Owner to order a shutdown of work in case contamination of areas adjacent to controlled work areas has occurred.
- 1.13.6 In all non-controlled areas where it is determined by the Environmental Consultant (through visual inspection or air monitoring) that contamination has leaked, the Contractor shall be responsible to the complete isolation and cleaning of such areas under the direction of the Environmental Consultant and at no extra charge to the Owner.
- 1.13.7 The Environmental Consultant has been given authorization by the Owner to ensure that the Contractor adheres to specified procedures and materials and to inspect for completion and final cleanliness. Any additional work (including labour and material charges) specified by the Environmental Consultant to achieve completion of work to the level specified shall be carried out by the Contractor at no additional charge to the Owner.
- 1.13.8 The Contractor shall ensure that all equipment and materials to be used on the project are acceptable to the Environmental Consultant. Unacceptable materials and equipment shall be replaced by the Contractor at no additional charge to the Owner.
- 1.13.9 The Contractor shall be responsible for all additional inspection charges which are carried out as a result of a failure by the Contractor to meet set criteria relating to schedule, health and safety and quality.
- 1.14 Air Monitoring**
- 1.14.1 Air samples may be collected by the Environmental Consultant (on behalf of the owner) from the start of work until the completion of the tear down operations, both inside and/or outside the controlled work areas.
- 1.14.2 The objective of air monitoring is to detect defects in the containment of controlled areas and to ensure that any contamination of building spaces beyond the controlled areas is discovered and rectified immediately.
- 1.14.3 Any contamination of areas outside the limits of the controlled work areas (as determined by air monitoring) shall be contained and shall be thoroughly cleaned to the Environmental Consultant's satisfaction. The Contractor shall be responsible for all additional charges associated with such work.
- 1.14.4 Air monitoring will be carried out following procedures specified in the latest edition of the National Institute for Occupational Safety and Health (NIOSH) method 7400A. The samples will be analyzed by the Phase Contrast Microscopy (PCM) technique as specified in NIOSH method 7400A. A Fibrous Aerosol Monitor (FAM) may also be used.
- 1.14.5 The Contractor shall cooperate with the Environmental Consultant during air monitoring and shall:
- 1.14.6 Provide workers to wear the sampling equipment for up to the duration of an entire shift.
- 1.14.7 Ensure that the workers exercise care and avoid damaging the Environmental Consultant's equipment.
- 1.14.8 Ensure that the samples and equipment are not tampered with.
- 1.14.9 The Contractor shall be responsible for charges associated with re-sampling due to tampering with the air samples.
- 1.14.10 The Contractor shall be responsible for repair or replacement charges of testing equipment that become damaged due to the actions of the Contractor forces.
- 1.14.11 The maximum allowable concentration of airborne fibres outside an asbestos work area is 0.05 fibres per cubic centimetre (fibre/cc).
- 1.14.12 PCM or FAM results equal to or greater than the specified level will indicate asbestos contamination of these perimeter areas.

- 1.14.13 The contaminated areas shall be isolated, contained and cleaned to the satisfaction of the Environmental Consultant.
- 1.14.14 The maximum allowable concentration of airborne fibres inside an asbestos work area is 2.5 fibres/cc.
- 1.14.15 Clearance air samples may be collected inside the work area after it is visually inspected by the Environmental Consultant, authorization is given to spray a lock-down agent and the lock-down agent is allowed to completely dry.
- 1.14.16 Air samples will be analyzed by the PCM method. The area inside a full enclosure will be considered clean and clear for public occupancy only if the fibre levels are less than 0.01 fibres/cc.
- 1.14.17 In case the fibre levels are equal to or greater than 0.01 fibres/cc, the Contractor shall be responsible for re-cleaning the asbestos work area and re-applying the lock-down agent. This process will have to be repeated until the fibre levels are below the specified limit.
- 1.14.18 The Contractor shall be responsible for all charges associated with additional air monitoring which can only be carried out by the Environmental Consultant.
- 1.14.19 Clearance air sampling inside a full enclosure will be carried out using aggressive sampling procedures as specified in O. Reg. 278/05, S.18(6).
- 1.14.20 Exhaust from forced air equipment (such as a 1 horsepower leaf blower) is directed towards ledges, ceilings, floors, walls and other surfaces in the room before the sampling pumps are started.
- 1.14.21 Forced air equipment will be operated for a period of 5 minutes for every 1,000 square feet of floor space.
- 1.14.22 The 20" fan(s) is then located in the middle of the room, placed on slower speed and directed towards the ceiling.
- 1.14.23 One 20" fan will be employed for every 10,000 cubic feet of room space.
- 1.15 Waste Transport and Disposal**
- 1.15.1 All asbestos-containing and asbestos-contaminated materials shall be disposed of as prescribed by O. Reg. 347/90
- 1.15.2 All wash water generated from decontamination activities shall be treated as asbestos waste and shall be disposed of accordingly.
- 1.15.3 All non-asbestos containing waste generated during demolition activities inside an asbestos work area shall be treated as asbestos waste.
- 1.15.4 Non-porous materials that can be washed and properly cleaned can be disposed of as clean waste.
- 1.15.5 All sharp asbestos-contaminated materials (such as hangers, T-bars, wood, etc.) that could rip or damage a 6mil polyethylene waste disposal bag shall be disposed of in a sealed solid asbestos waste container.
- 1.15.6 The waste must be stored and transported in an enclosed, lockable waste bin.
- 1.15.7 Every vehicle used for the transportation of asbestos waste shall display a Class 9 Label.

- 1.15.8 Both sides of the vehicle used for the transportation of asbestos waste and every waste bag and container shall display the word CAUTION in letters not less than 10 cm in height and the words:
- CONTAINS ASBESTOS FIBRES**
- Avoid Creating Dust
- Asbestos May Be Harmful to Your Health
- Wear Approved Protective Equipment
- 1.15.9 The transport vehicle must be properly equipped to deal with asbestos waste spills. Equipment shall include, but not limited to, respiratory protective equipment, disposable protective clothing, 6 mil polyethylene bags, shovel and broom and wetting agent.
- 1.15.10 For chrysotile asbestos, the words Asbestos, White, Product Identification Number 2590 must be displayed on every waste container.
- 1.15.11 For asbestos waste of unknown material or an asbestos type other than chrysotile, the words Asbestos, Blue, Product Identification Number 2212 must be displayed on every waste container.
- 1.15.12 The Contractor shall submit to the Environmental Consultant a copy of the shipping document and weight receipt for every shipment of asbestos waste.

PART 2 - FACILITIES AND PRODUCTS

2.1 **Equipment**

- 2.1.1 Provide equipment that is suitable for intended use as specified by the proper standards. All equipment used on the project shall be clean and in good state of repair.
- 2.1.2 Airless Sprayer: Equipment used for the application of amended water to saturate asbestos-containing materials before removal.
- 2.1.3 Electrical Components and Equipment: supplied by the Contractor for performance of work on this project shall meet the requirements of the Canadian Standards Association (CSA) for use as installed.
- 2.1.4 Electrical Power Cords: Use single length power cords. If single length will not reach work area, use waterproof connectors to connect separate lengths. Use heavy duty cords in high traffic areas or in areas where abrasion of cords is expected. Only grounded electrical cords will be allowed.
- 2.1.5 Ground Fault Panel: use an electrical panel that is installed by a licensed electrician and is equipped with the following:
- 2.1.5.1 Ground fault circuit interrupts (breaker type) of sufficient capacity to supply all lights and equipment to be used in the work area.
- 2.1.5.2 Breakers shall have 5mA ground fault protection.
- 2.1.5.3 Main switch disconnect, test buttons and reset switches and circuit breaker lights.
- 2.1.5.4 Proper enclosure to prevent the penetration of moisture, dust and debris.
- 2.1.6 Temporary Lighting: Provide illumination as required in all work areas to perform the work safely and adequately. Illumination can be achieved by the use incandescent or fluorescent lamps. All lamps shall be protected by grounded guard cages or tempered glass enclosures.
- 2.1.7 Fine Atomizing Spray Nozzle: an airless sprayer nozzle that is designed to deliver no less than 1 gallon per minute of fine spray of water or lock-down agent.
- 2.1.8 Flexible Ducting: Tubing used for the exhaust of negative air units. The tubing is made up of plastic with metal reinforcement and is of a diameter that is equal to the exhaust port of a negative air unit.
- 2.1.9 Garden Sprayer: a metal or plastic pressure-can hand pump equipped with a hose and a metal wand. The pump is used to spray a fine mist of liquid on surfaces in a work area.
- 2.1.10 Glove Bag: The glove bag shall meet the following requirements if it will be used more than once:
- 2.1.10.1 Shall be a Safety-T-Strip trade product with a configuration suitable to fit the work at hand.
- 2.1.10.2 Shall have an internal ziplock feature for sealing the waste at the bottom of the bag.
- 2.1.10.3 Shall be secured around the material being removed using the securing device supplied with the bag. The securing device consists of a 1 inch reusable nylon straps with a metal tightening buckle for sealing the ends of the bag.
- 2.1.10.4 Shall be made of polyvinyl chloride (10 mil) minimum thickness with integral gloves and valve ports.
- 2.1.10.5 Shall be equipped with reversible double pull zipper with protective flaps to facilitate installation and progressive movement on pipes.
- 2.1.10.6 If it will not be used more than once, the glove bag shall meet the following requirements:
- 2.1.10.6.1 Shall be made of polyvinyl chloride or equivalent plastic bag with a minimum thickness of 6 mil.
- 2.1.10.6.2 Shall be equipped with two gloves projecting inward and valves for attaching a vacuum hose or a metal wand.

- 2.1.10.6.3 Shall have a pouch for storing tools and enough space to accommodate the storage of removed materials and to allow for proper sealing of the bag. The bag shall also be labelled with warning signs to identify the content of the bag.
- 2.1.11 HEPA Filtered Negative Air Unit: A portable air handling system which is used to create negative air pressure differential by the extracting the air directly from the work area and discharging it to the exterior of the area. The unit shall be equipped as follows: Fan, HEPA filter, pre-filters, pressure differential gauge, cabinet, high/low switch, on/off switch.
- 2.1.11.1 The fan shall have a capacity of 1500 cubic feet per minute. The fan shall be considered to have 80% of the rated of air flow unless tested and certified by a company specializing in such measurements and subject to the approval of the Environmental Consultant.
- 2.1.11.2 Each unit shall have a HEPA filter installed as a final filter in the unit. A tight seal shall be established between the filter and the filter housing through the use of a rubber gasket. Each filter shall be clearly marked with the serial number, direction of air flow, efficiency, air flow rating, name of manufacturer and resistance and shall bear UL586 label.
- 2.1.11.3 Each unit shall have an on/off switched located on the exterior of the cabinet. The unit shall also be equipped with overload protection and components such as cabinet, fan, motor, etc. shall be grounded.
- 2.1.11.4 Each unit shall have a pressure differential gauge to monitor the filter loading and to indicate when the filters needs to be changed. The unit shall also have a time meter to indicate the total accumulated hours of operation.
- 2.1.11.5 Each unit shall have the following warning and safety devices: a means for preventing the unit from operating without a HEPA filter; auto shutoff system to stop the fan in case of HEPA filter failure such as rupture of the filter or blockage of air flow through the filter.
- 2.1.11.6 Provide units with pre and intermediate filters installed at the intake of the unit and secured in place with clamps or special filter housings. Two pre-filters are required: the first pre-filter shall be of the low efficiency type and shall be 98% efficient for particles 100 microns and larger; the second pre-filter shall be of the medium efficiency type and shall be 95% efficient for particles down to 5 microns.
- 2.1.11.7 The cabinet of the unit shall be constructed of durable material able to withstand rough handling during removal work. The cabinet shall have wheels and shall be designed to allow access to the inside of the unit from the intake side for maintenance and replacement of filters. The unit shall be factory sealed to prevent the escape of dust and debris during transport and use.
- 2.1.12 HEPA Vacuum: A vacuum unit equipped with HEPA filter and designed so that all discharged air passes through the filter. Shall be equipped with all attachments, tools and fittings to facilitate the performance of the work.
- 2.1.13 Pressure Differential Monitoring Unit: An instrument designed to measure the difference in pressure between the interior and exterior of a work area. As a minimum, the instrument shall consist of the following: a continuous recoding wheel chart or tape; a gauge with a range from 0 to 0.1 inches water; sensor tubing and wall clamps; wall mounting devices, low limit and high limit audible alarm; and auto reset.
- 2.1.14 Power Washer: A piece of equipment capable of delivering an airless stream of liquid (water) at a pressure between 1200 and 2500 psi. Typically used for cleaning of work area surfaces and equipment and for saturating materials scheduled for removal before work start to reduce the creation of dust.
- 2.1.15 Scaffolding: Select, erect and use scaffolding in a manner that is in compliance with all applicable occupational health and safety regulations.
- 2.1.15.1 Types of scaffolding allowed consist of suspension or standing types such as cantilever, metal tube and coupler, pole or outrigger or tubular welded frame.
- 2.1.15.2 Provide non-skid surfaces and/or foot boards on all scaffolds where foot traffic is anticipated.

- 2.1.15.3 Provide an abrasive non-slip surfaces on rungs of metal ladders.
- 2.1.16 Water Service Components and Equipment: supplied by the Contractor for performance of work on this project shall be temperature and pressure rated for operation of the temperature and pressure encountered.
- 2.1.16.1 Hot water heater to be used for supplying water to the shower shall be:
- 2.1.16.1.1 ULC rated electric hot water heater.
- 2.1.16.1.2 Appropriately sized for the project.
- 2.1.16.1.3 Powered from the ground fault panel.
- 2.1.16.1.4 Equipped with a relief valve that is piped to a drip pan secured to the water heater.
- 2.1.16.2 Supply water to each working area and decontamination unit using pipes having a pressure rating greater than the pressure of the water distribution system. Provide fittings as necessary to allow connecting to existing systems and other temporary facilities.
- 2.1.16.3 The shower provided for the decontamination facility shall be of the walk through type. The shower pan shall be a waterproof, one piece pan constructed from stainless or galvanized steel with welded seams, copper or lead with soldered seams or fibreglass reinforced with wood. The shower head shall be adjustable for spray size and intensity. The shower shall be supplied with separate hot and cold water. The control for water temperature, flow and shut off shall be located inside the shower.
- 2.1.16.4 Multi-stage cascade filter units shall be provided on drain lines from any water source carrying asbestos-contaminated water from the work area including the shower. The units shall be provided with a primary and a secondary disposal filter elements. The primary filter shall allow the passage of particles that are 20 microns and smaller. The secondary shall allow the passage of particles that are 5 microns and smaller. The units shall be connected so that the water passes the primary filter first and the discharge of the primary filter passes through the secondary filter.
- 2.2 Materials**
- 2.2.1 Materials destined for use on this project shall be undamaged, shall comply with the requirements of the project and specifications and shall be unused at the time of installation unless otherwise indicated.
- 2.2.2 Asbestos Waste Container: An impermeable container that is dust-tight and impervious to asbestos waste. Shall be made of new material only and shall be labelled as required by applicable regulations with a pre-printed cautionary asbestos warning label. The container shall (depending on the nature of the waste material) be comprised of the following:
- 2.2.2.1 A 6 mil thick leak-tight polyethylene bag labelled as required and placed inside another 6 mil sealed polyethylene bag (in case the waste does not contain any sharp objects).
- 2.2.2.2 A 6 mil sealed polyethylene bag positioned inside or outside a heavy duty leak tight solid sealed container of sufficient strength to prevent perforation of the container during handling (in case the waste contains sharp objects).
- 2.2.3 Caulking: Acrylic polymer sealant (non-asbestos-containing) that is non-staining.
- 2.2.4 Drop Sheets: Sheets made up of polyethylene of size and type appropriate to the work. To be placed under an area where work is being carried out.
- 2.2.5 Encapsulant: Type 1 penetrating Class A water based encapsulant conforming to CGSB 1-GP-205M and approved by the Fire Marshall and having a flame spread and smoke development ratings both less than fifty.
- 2.2.6 Felts: 1/16" thick and 36" to 72" wide non-coated, standard cellulose building felt.

- 2.2.7 Rip-Proof (Fibre Re-enforced) Polyethylene Sheeting: 8 mil fibre re-enforced fabric (bonded on both sides with polyethylene sheeting) made up from 5 mil weave and 2 layers of 1.5 mil poly laminate. Provide new material only in maximum size sheets (to fit work) to minimize joints.
- 2.2.8 Fire Extinguisher: Provide type “ABC” dry chemical fire extinguishers of a combination of extinguishers suitable for the type of exposure in each case.
- 2.2.9 First Aid Supplies: Provide and maintain first aid supplies on the project site as required by applicable regulations and construction industry recommendations.
- 2.2.10 Flame Resistant Polyethylene Sheeting: a layer of polyethylene sheeting that conforms to the requirements of the NFPA Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide new material only in 6 mil thickness and in maximum size sheets (to fit work) to minimize joints.
- 2.2.11 Foam: Polyurethane expanding foam of low density.
- 2.2.12 Lock Down Sealant: a clear, non-staining, water dispersible type, slow drying sealant that is used for the purpose of trapping residual dust. The sealer shall remain sticky on the surface for an 8 hour period as a minimum. The product shall have flame spread and smoke development ratings of less than 50 for both. The sealant shall be compatible with replacement insulation or fireproofing and shall be capable of withstanding service temperature of substrate.
- 2.2.13 Polyethylene Sheeting: A 6 mil minimum (unless otherwise specified) thickness polyethylene film in maximum sheet size to minimize seems and black, frosted or clear as required to meet specifications.
- 2.2.14 Protective Coveralls: Full body coveralls complete with hoods and shoe coverings, made up of a material which does not permit penetration of asbestos fibres and is disposable.
- 2.2.15 Spray Cement: Specifically formulated spray adhesive in spray cans devised to stick to polyethylene sheets.
- 2.2.16 Tape: 2” to 3” widths reinforced tape (cloth or fibreglass reinforced) appropriate for sealing polyethylene sheets under dry and wet conditions.
- 2.2.17 Wetting Agent: A mixture of water and a surfactant used for wetting asbestos-containing materials before removal to minimize the release of fibres during disturbance of the material.

2.3 Platforms

- 2.3.1 Work in certain areas of the project will require the use of platforms. Unless otherwise specified, work platforms for this project shall be erected as follows:
- 2.3.1.1 Set up a support structure of metal, wood or equivalent scaffolding above which the work platform will be positioned.
- 2.3.1.1.1 Place one layer of rip proof polyethylene sheeting over scaffold board.
- 2.3.1.1.2 Place one layer of plywood sheets over the rip proof poly and fasten in place using nails.
- 2.3.1.1.3 Ensure that the plywood is of sufficient thickness and is capable of supporting the weight of all personnel and equipment expected to be present on the platform. Comply with the requirements of applicable Occupational Health and Safety Acts and Regulations.
- 2.3.1.1.4 Prevent water leakage from the platform by taping and caulking the seams between the plywood sheets and by instating a minimum of two layers of rip proof poly over the plywood sheets.
- 2.3.1.1.5 Isolate the platform from the occupied areas through the use of plywood walls.
- 2.3.1.2 The bases of the support structure shall be adequately sized and rated to protect the floors. The Contractor shall be responsible for rectifying any damages caused by the support structure and the platform.
- 2.3.1.3 Ensure that the support structure is set up in a manner that will not interfere with activities that are regularly carried out in the space.

- 2.3.1.4 Ensure that the existing lighting levels are maintained under the platform by using temporary fluorescent light fixtures.
- 2.3.1.5 Install air tight and water tight escape hatches for every 500 square feet of platform. The hatches shall be designed to allow for quick egress from the work area in case of an emergency and shall be supplied with emergency lighting.

2.4 **Decontamination Enclosure Systems**

2.4.1 Decontamination enclosure systems shall be constructed before any other work commences. The decontamination systems shall include one system for workers decontamination and another system for equipment and waste decontamination.

2.4.2 Enclosure System for Worker Decontamination: This enclosure system shall consist of a clean room, a shower room and an equipment and access room.

2.4.2.1 Clean Room: A clean room shall be constructed between the clean occupied areas and the shower room. The clean room shall have:

2.4.2.1.1 A storage space for clean personal protective equipment.

2.4.2.1.2 Hangers, hooks and secures lockers for workers use and for safe storage of personal belongings.

2.4.2.1.3 A mirror to aid workers in fittings respiratory equipment before entry into the contaminated areas.

2.4.2.1.4 Airlocks on the shower side and the clean occupied area side.

2.4.2.1.5 A lockable wood door on the occupied area side to prevent unauthorized entry into the work areas.

2.4.2.1.6 An area of 100 square feet (minimum) or shall be based on a criteria of 10 square feet per worker, whichever is greater.

2.4.2.2 Shower Room: A shower room shall be constructed between the clean room and the equipment and access room. The shower room shall have:

2.4.2.2.1 A shower unit of the walk through type for every 8 workers.

2.4.2.2.2 Airlocks on the clean room side and the equipment and access room side.

2.4.2.2.3 Clean towels, soap and shampoo supplied by the Contractor for use by the workers.

2.4.2.2.4 A constant supply of hot and cold running water with individual controls within the shower units to regulate water temperature and flow rate.

2.4.2.2.5 Individual hot and cold shut-off valves with access from the clean room of the decontamination enclosure.

2.4.2.2.6 Containers for disposing of used respirator filters and hooks for hanging respirators located on the clean side of the shower.

2.4.2.2.7 Watertight piping and sealed drip pans.

2.4.2.2.8 Sump pumps for removing shower wastewater. Pump the wastewater through the filter systems specified before discharging into sanitary sewer drains.

2.4.2.2.9 Power switches and outlets that are ground fault protected. Sump pumps power switches shall be located on both sides of the shower unit.

2.4.2.3 Equipment and Access Room: An equipment and access room shall be constructed between the shower room and the contaminated work areas. The equipment and access room shall have:

2.4.2.3.1 Airlocks on the shower side and the contaminated area side.

2.4.2.3.2 An area of not less than 100 square feet to allow one worker enough space to undress comfortably.

2.4.2.3.3 Facilities for storing personal protective equipment and clothing which will be used again inside the contaminated areas.

2.4.3 Enclosure System for Equipment and Waste Decontamination: This enclosure system shall consist of a transfer room, a holding room and a cleaning room.

2.4.3.1 Transfer Room: A transfer room shall be constructed between the clean occupied areas and the holding room. The room shall have a lockable wood door on the occupied area side to prevent unauthorized entry into the work areas. It shall have airlocks on the clean occupied area side and

the holding room side. The size of the transfer room should be large enough to facilitate double bagging of waste bags or to house the largest piece of equipment used.

- 2.4.3.2 Holding Room: A holding room shall be constructed between the transfer room and cleaning room. The room shall have airlocks on the transfer room side and the cleaning room side. The size of the transfer room should be large enough to facilitate double bagging of waste bags or to house the largest piece of equipment used inside the asbestos work areas.
- 2.4.3.3 Cleaning Room: A cleaning room shall be constructed between the holding room and the contaminated area. The room shall have airlocks on the holding room side and the contaminated area side. The size of the cleaning room should be large enough to facilitate washing and cleaning of waste bags, containers and equipment and for double bagging of waste bags.
- 2.4.3.4 This enclosure system shall not be used by workers exiting the contaminated area as a replacement for the workers decontamination enclosure system.
- 2.4.4 Construction of Decontamination Enclosure Systems: Enclosures shall be constructed using suitable framing to fit the area. Alternatively, existing rooms can be used subject to the approval of the Environmental Consultant.
- 2.4.4.1 Use 2"x4" studs at 16" o/c to the construct the walls and ceilings frames. The interior side of the frame shall be covered by one layer of rip proof polyethylene sheeting.
- 2.4.4.2 Cover the exterior side of the frame located inside the contaminated area with plywood sheets. All plywood sheets joints shall be sealed with duct tape. Cover the plywood sheets with two independently sealed layers of rip proof polyethylene sheeting. Cover the exterior side of the frame which are not located inside the contaminated area or in an occupied area with 1 layer of rip proof polyethylene sheets. The exterior side of the frame located in an occupied area shall be covered with painted drywall sheets installed over one layer of rip proof polyethylene sheeting.
- 2.4.4.3 The floor of the decontamination enclosure system shall be protected with two independently sealed layers of rip proof poly sheets. The poly sheets used on the floor shall overlap with the poly sheets installed on the walls.
- 2.4.4.4 Separate the various rooms of the decontamination enclosure systems by curtained doorways constructed using two flap doors which are of the same dimensions as the openings. The flaps shall be made up of two layers of rip proof polyethylene sheets. Fasten the two sheets together and reinforce all edges with duct tape. The top and one side of each flap shall be secured to the enclosure frame. Attach a weight to the bottom of each of the flaps. Mark the opening between the two flaps using pieces of duct tape configured in the shape of a directional arrow.

PART 3 - EXECUTION

3.1 *Type 1 Removal Operation*

- 3.1.1 Initial Preparation and Isolation of Work Areas: Unless otherwise specified, work carried out as part of this phase shall proceed as follows:
- 3.1.1.1 Carry out a survey of the work areas to compile an inventory of existing damages and provide a copy to the Environmental Consultant.
- 3.1.1.2 The Contractor is responsible for moving materials and objects which are present in the work areas.
- 3.1.1.3 Prevent the spread of dust from the work area using measures appropriate to the work to be done.
- 3.1.1.3.1 Shut off, lock out and seal all ventilation duct vents with the application of one layer of 6 mil (0.15mm) thick clear polyethylene sheet sealed with tape.
- 3.1.1.3.2 Use FR polyethylene drop sheets over all flooring in work areas where dust and contamination cannot otherwise be thoroughly cleaned. This does not apply if work involves the removal of asbestos-containing floor tiles.
- 3.1.1.3.3 Use one layer of 6 mil (0.15 mm) thick clear polyethylene sheets to cover walls.
- 3.1.1.3.4 Separate parts of the building required to remain in use from the work area by polyethylene drop sheets at the perimeter of the work area.
- 3.1.1.3.5 Separate the work area with clearly visible warning signs advising of the hazards of asbestos dust and that entry is restricted to authorized trained personnel wearing personal protective equipment.
- 3.1.1.3.6 Erect scaffolding or platforms where necessary to perform the removal work. All platforms that exceed 25 feet in height will require the submission of a shop drawing stamped by a professional engineer for approval by the inspector within a minimum of 5 days prior to commencing the work. Guard rails shall be provided around all platforms or scaffolding where practicable. Cover the floor area of the scaffold or platform with one layer of FR polyethylene. Extend the floor of scaffolding or platform under an item being removed to act as a receptacle. Polyethylene sheeting shall be suitably braced and/or restrained so that billowing or failure of the polyethylene sheeting or taped joints does not occur.
- 3.1.2 Entry and Exit Procedures from Asbestos Removal Work Areas: the following general procedures shall be adhered to when entering into and exiting from asbestos abatement work areas:
- 3.1.2.1 Work Area Entry Procedures:
- 3.1.2.1.1 Every worker and visitor planning to enter the work area should remove all street clothing and should store them in a designated clean change room.
- 3.1.2.1.2 The person shall then put on disposal coverall with head covering, respirators with clean filters and foot covering and shall proceed to the work area.
- 3.1.2.2 Work Area Exit Procedures:
- 3.1.2.2.1 Each worker shall decontaminate their protective clothing, boots and respirator by first HEPA vacuuming and then by damp wiping using soap and water.
- 3.1.2.2.2 The removed disposable coveralls shall be disposed of as asbestos waste in a 0.15 mm (6 mil) labelled waste bag. Respirator filter inlets shall be sealed in tape or disposed of as asbestos waste.
- 3.1.3 Asbestos Removal Procedures
- 3.1.3.1 Asbestos Removal shall not commence until:
- 3.1.3.1.1 The work area is effectively separated from clean areas of the building.
- 3.1.3.1.2 Warning signs are posted outside the removal work areas.
- 3.1.3.1.3 All surfaces which are not possible to clean are sealed with polyethylene sheeting and tape.

- 3.1.3.1.4 Arrangements have been made for waste disposal, landfill site operator has been contacted and storage bin is on site.
- 3.1.3.1.5 Tools equipment and materials are on hand and in the work area.
- 3.1.3.1.6 Facilities for the washing of hands and face are available for workers leaving the work area.
- 3.1.3.2 Before beginning work remove visible dust from surfaces in the work area where dust is likely to be disturbed during the course of the work. Use HEPA vacuum, or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate. Do not use compressed air to clean up or remove dust from any surface.
- 3.1.3.3 Wet materials containing asbestos to be cut, ground, abraded, drilled, or otherwise disturbed with amended water. Use garden type low velocity fine mist sprayer. Perform work in a manner to reduce dust creation to lowest levels practicable. Spray asbestos material repeatedly during the work process to minimize asbestos fibre release.
- 3.1.3.4 Additional cement board removal procedures.
 - 3.1.3.4.1 Cement board shall be removed intact where possible.
 - 3.1.3.4.2 When not possible to remove intact, the board shall be cut with hand saws where necessary and dust shall be collected with a HEPA vacuum cleaner nozzle held under the cut area.
 - 3.1.3.4.3 Drop sheets shall be used no more than 0.5 metres below the cutting location and shall be constructed in such a manner that any dust not removed by the HEPA vacuum is collected.
- 3.1.3.5 Remove material in sections as intact as possible.
- 3.1.3.6 Frequently during the work and immediately after completion of the work, clean up dust and waste containing asbestos using a HEPA vacuum or by damp wiping.
- 3.1.4 Final Clean
 - 3.1.4.1 When removal is complete, clean the entire work area by HEPA vacuuming and wet wiping.
 - 3.1.4.2 The work area shall be deemed clean by the Inspector when there is no visible residue, dirt, film, stain, or discolouration resulting from either asbestos removal or cleaning activities.
 - 3.1.4.3 After completion of the initial cleaning and after the Inspector has passed the visual inspection, spray sealant on all surfaces in the work area, including, but not limited to:
 - 3.1.4.3.1 where asbestos material has been removed.
 - 3.1.4.3.2 polyethylene sheeting used on walls, floors and ceilings.
 - 3.1.4.4 Sealant should be sprayed using a garden reservoir type low velocity fine mist sprayer. The sprayer cannot be used if the nozzle is partially obstructed, or if a uniform fine mist spray cannot be obtained.
 - 3.1.4.5 After the area is declared clean and written approval to proceed has been received from the Inspector:
 - 3.1.4.5.1 Dismantle boundaries and isolating barriers as asbestos waste. Drop sheets shall be wetted and folded to contain dust and then placed in waste bags.
 - 3.1.4.5.2 Immediately before their removal from the work area, and disposal, clean each filled labelled waste bag using damp cloths or HEPA vacuum and place in second clean clear polyethylene waste bag.
 - 3.1.4.5.3 Dispose of waste as per procedures specified in subsection 1.15 Waste Transport and Disposal.
 - 3.1.4.6 Repair or replace objects damaged in the course of the work. Re-establish objects moved to temporary locations in the course of the work, in their proper positions. Re-secure mounted objects removed in the course of the work in their former positions.

3.2 Type 2 Removal Operation: For Work In Enclosures

- 3.2.1 Initial Preparation and Isolation of Work Areas: Unless otherwise specified, work carried out as part of this phase shall proceed as follows:
- 3.2.1.1 Carry out a survey of the work areas to compile an inventory of existing damages and provide a copy to the Environmental Consultant.
- 3.2.1.2 The Contractor is responsible for moving materials which are present in the work.
- 3.2.1.3 Prevent the spread of dust from the work area using measures appropriate to the work to be done.
- 3.2.1.3.1 Shut off, lock out and seal all ventilation duct vents with the application of one layer of 6 mil (0.15 mm) thick clear polyethylene sheet sealed with tape.
- 3.2.1.3.2 Clean all moveable objects within proposed work area using a HEPA vacuum.
- 3.2.1.3.3 Clean fixed casework, plant, and equipment within proposed work area, using a HEPA vacuum and cover with polyethylene sheeting sealed with tape.
- 3.2.1.3.4 Clean proposed work areas using, where practicable, HEPA vacuum cleaning equipment. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA filter-equipped vacuums.
- 3.2.1.3.5 Cover and seal airtight light fixtures, duct openings and other suspended ceiling objects using clear 6 mil polyethylene sheeting and tape.
- 3.2.1.3.6 Erect scaffolding or platforms necessary to perform the removal work. All platforms that exceed 25 feet in height will require the submission of a shop drawing stamped by a professional engineer for approval by the inspector within a minimum of 5 days prior to commencing the work. Guard rails shall be provided around all platforms or scaffolding where practicable.
- 3.2.1.3.7 Cover floor area of scaffold or platform with one layer of FR polyethylene.
- 3.2.1.3.8 Extend scaffolding or platform under the item being removed to prevent material from falling.
- 3.2.1.3.9 Separate parts of the building required to remain in use from the work area by polyethylene drop sheets at the perimeter of the work area.
- 3.2.1.3.10 Set up an airtight enclosure around the work area where the work on friable asbestos-containing material is to be carried out. Enclosure should be set up using 1 layer of FR polyethylene sheeting to cover the floors, and 1 layer of 6 mil (0.15 mm) thick clear polyethylene sheeting to cover the walls. Two layers of FR polyethylene sheeting should be used to cover carpeted floors. Polyethylene on the walls should be made to overlap with the polyethylene on the floor a minimum of 300 mm.
- 3.2.1.3.11 Polyethylene sheeting shall be suitably braced and/or restrained so that excessive billowing or failure of the polyethylene sheeting or taped joints does not occur as a result of the negative pressure differential created by the vacuums.
- 3.2.1.3.12 Erect a temporary structure made of wooden studs to support polyethylene sheeting where necessary.
- 3.2.1.3.13 Insert a hose of a HEPA filter equipped vacuum into the enclosure to provide negative air pressure inside the enclosure.
- 3.2.1.3.14 Entrance to the enclosure should be covered with two pieces of overlapping polyethylene sheeting.
- 3.2.1.3.15 Separate the work area with clearly visible warning signs advising of the hazards of asbestos dust and that entry is restricted to authorized trained personnel wearing personal protective equipment.
- 3.2.2 Entry and Exit Procedures from Asbestos Removal Work Areas: the following general procedures shall be adhered to when entering into and exiting from asbestos abatement work areas:
- 3.2.2.1 Work Area Entry Procedures:
- 3.2.2.1.1 Every worker and visitor planning to enter the work area should remove all street clothing and should store them in a designated clean change room.

- 3.2.2.1.2 The person shall then put on disposal coverall with head covering, respirators with clean filters and foot covering and shall proceed to the work area through the flaps covering the entrance to the enclosure.
- 3.2.2.2 Work Area Exit Procedures:
- 3.2.2.2.1 Each worker shall decontaminate their protective clothing, boots and respirator by first HEPA vacuuming and then by damp wiping using soap and water.
- 3.2.2.2.2 The removed disposable coveralls shall be disposed of as asbestos waste in a 0.15 mm (6 mil) labelled waste bag. Respirator filter inlets shall be sealed in tape or disposed of as asbestos waste.
- 3.2.3 Asbestos Removal Procedures
- 3.2.3.1 Asbestos Removal shall not commence until:
- 3.2.3.1.1 The work area is effectively separated from clean areas of the building.
- 3.2.3.1.2 Warning signs are posted outside the removal work areas.
- 3.2.3.1.3 All surfaces which are not possible to clean are sealed with polyethylene sheeting and tape.
- 3.2.3.1.4 Arrangements have been made for waste disposal, landfill site operator has been contacted and storage bin is on site.
- 3.2.3.1.5 Tools equipment and materials are on hand and in the work area.
- 3.2.3.1.6 Facilities for the washing of hands and face are available for workers leaving the work area.
- 3.2.3.2 Before beginning the work remove visible dust from surfaces in the work area. Use HEPA vacuum, or damp cloths where damp cleaning is considered more appropriate. Do not use compressed air to clean up or remove dust from any surface.
- 3.2.3.3 Wet materials containing asbestos to be removed, disturbed, or sealed with amended water. Garden reservoir type low velocity fine mist sprayer may be used. Perform work in a manner to reduce dust creation to lowest levels practicable. Spray asbestos material repeatedly during the work process to minimize asbestos fibre dispersion.
- 3.2.3.4 Removed material has to be placed directly in waste bags. Wherever possible, asbestos-containing material should be removed in sections as intact as possible.
- 3.2.3.5 Areas that used to be covered with the asbestos-containing material should be cleaned after the material is removed, using brushes, steel wool, or any other tools suitable.
- 3.2.3.6 Frequently during the work and immediately after completion of the work, clean up dust and waste containing asbestos using a HEPA vacuum or by damp wiping.
- 3.2.3.7 All labelled waste bags should be placed in clean clear 6 mil poly bags before they are taken out of the enclosure.
- 3.2.4 Final Clean
- 3.2.4.1 When removal is complete, clean the entire work area by HEPA vacuuming and wet wiping.
- 3.2.4.2 All tools and equipment used in the removal process such as hook knives, extension cords, scrapers, wire brushes, garden sprayers etc., should be washed and cleaned and placed in 6 mil polyethylene bags.
- 3.2.4.3 The work area shall be deemed clean by the Inspector when there is no visible residue, dirt, film, stain, or discolouration resulting from either asbestos removal or cleaning activities.
- 3.2.4.4 After completion of the initial cleaning and after the Inspector has passed the visual inspection, spray sealant on all surfaces in the work area, including, but not limited to:
- 3.2.4.4.1 where asbestos material has been removed.
- 3.2.4.4.2 polyethylene sheeting used on walls, floors and ceilings.

- 3.2.4.5 Sealant should be sprayed using a garden reservoir type low velocity fine mist sprayer. The sprayer cannot be used if the nozzle is partially obstructed, or if a uniform fine mist spray cannot be obtained.
- 3.2.4.6 Enclosure should be left standing until all the sealant has dried or, if required, until an air sample is taken inside the enclosure, and the fibre concentration level is below 0.05f/cc.
- 3.2.4.7 After the area is declared clean and written approval to proceed has been received from the Inspector:
 - 3.2.4.7.1 Dismantle boundaries and isolating barriers and treat as asbestos waste. Drop sheets shall be wetted and folded to contain dust and then placed in waste bags.
 - 3.2.4.7.2 Immediately before their removal from the work area, and disposal, clean each filled labelled waste bag using damp cloths or HEPA vacuum and place in second clean clear polyethylene waste bag.
 - 3.2.4.7.3 Dispose of waste as per procedures specified in subsection 1.15 Waste Transport and Disposal.
- 3.2.4.8 Repair or replace objects damaged in the course of the work. Re-establish objects moved to temporary locations in the course of the work, in their proper positions. Re-secure mounted objects removed in the course of the work in their former positions.

3.3 *Type 2 Removal Operation: For Work Using Glove Bags*

- 3.3.1 Initial Preparation and Isolation of Work Areas: Unless otherwise specified, work carried out as part of this phase shall proceed as follows:
 - 3.3.1.1 Carry out a survey of the work areas to compile an inventory of existing damages and provide a copy to the Environmental Consultant.
 - 3.3.1.2 Prevent the spread of dust from the work area using measures appropriate to the work to be done.
 - 3.3.1.2.1 Shut off, lock out and seal all ventilation duct vents with the application of one layer of 6 mil (0.15 mm) thick clear polyethylene sheet sealed with tape.
 - 3.3.1.2.2 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over all flooring in work area where dust and contamination cannot otherwise be safely contained.
 - 3.3.1.2.3 Separate parts of the building required to remain in use from the work area by polyethylene drop sheets around the perimeter of the work area.
 - 3.3.1.2.4 Separate the work area with clearly visible warning signs advising of the hazards of asbestos dust and that entry is restricted to authorized trained personnel wearing personal protective equipment.
- 3.3.2 Worker Protection Procedures
 - 3.3.2.1 Before proceeding to the work area:
 - 3.3.2.1.1 Each worker shall don respirator and disposable coveralls, including head covering and suitable foot wear. Removal of street clothes in a designated clean room before wearing the disposable coveralls is recommended.
 - 3.3.2.2 Before leaving the work area:
 - 3.3.2.2.1 Each worker shall decontaminate their protective clothing, boots and respirator by first HEPA vacuuming and then by damp wiping using soap and water.
 - 3.3.2.2.2 The removed disposable coveralls shall be disposed of as asbestos waste in a 6 mil (0.15 mm) labelled waste bag.
 - 3.3.2.2.3 The worker shall proceed to clean their hands and arms. The waste water should be collected and filtered using a filter that passes particles 5 microns in size and smaller, before it is discharged into the municipal sewer system.
- 3.3.3 Asbestos Removal Procedures
 - 3.3.3.1 Asbestos Removal shall not commence until:

- 3.3.3.1.1 The work area is effectively separated from clean areas of the building by polyethylene drop sheets and the placing of rope barriers at the boundary of the designated work area. The boundaries of the work area shall be a minimum of 10 feet from the location of the insulation being removed.
- 3.3.3.1.2 Warning signs are posted outside the removal work areas.
- 3.3.3.1.3 All surfaces which are not possible to clean are sealed with polyethylene sheeting and tape.
- 3.3.3.1.4 Arrangements have been made for waste disposal, landfill site has been contacted and storage bin is on site.
- 3.3.3.1.5 Tools equipment and materials are on hand and in the work area.
- 3.3.3.1.6 Facilities for the washing of hands and face are available for workers leaving the work area.
- 3.3.3.2 Before beginning work remove visible dust from surfaces in the work area where dust is likely to be disturbed during the course of the work. Use HEPA vacuum, or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate. Do not use compressed air to clean up or remove dust from any surface.
- 3.3.3.3 Remove all obstructions from around pipe. Where access is required above plaster ceilings, provide sufficient openings to gain access.
- 3.3.3.4 Friable material containing asbestos to be removed or disturbed shall be thoroughly surface wetted before and during work unless wetting creates a hazard or causes damage. Use garden type low velocity fine mist sprayer. Sprayers that are partially clogged, or that does not produce uniformly fine mist will not be accepted. Perform work in a manner to reduce dust creation to lowest levels practicable.
- 3.3.3.5 Inspect all glove bags for defects before using. A defective bag shall not be used.
- 3.3.3.6 Ensure that the following tools are used:
 - 3.3.3.6.1 Knife shall have a retractable blade.
 - 3.3.3.6.2 Saw shall be a flexible wire type.
 - 3.3.3.6.3 Brushes shall not have metal bristles.
- 3.3.3.7 After written authorization has been received from the Inspector to proceed perform the removal using the following procedures.
 - 3.3.3.7.1 Place tools necessary to remove insulation, in tool pouch. Wrap the bag around pipe and close zippers. Seal bag to pipe with restraining nylon straps. Welds and folds of glove bag are to remain intact without modification to manufacturers design.
 - 3.3.3.7.2 Place hands in gloves and use necessary tools to remove insulation. Cut or remove exterior insulation covering where applicable to expose asbestos pipe covering. Wet exposed pipe or duct covering with sufficient mixture to suppress any dust. Arrange insulation in bag to obtain full capacity of bag.
 - 3.3.3.7.3 Insert nozzle of spray pump prefilled and primed with water and surfactant into bag through valve and wash down pipe and interior of bag thoroughly, use cloth or sponge to aid in washing process. Wet surface of insulation in lower section of bag.
 - 3.3.3.7.4 Waste material in bags intended for use at more than one location and which are equipped with internal zippers to seal off waste, shall have the upper section of bag thoroughly cleaned then shall be sealed off in lower sections of bag before bag is removed from pipe. Reinstall bag in new location before opening zip lock.
 - 3.3.3.7.5 If bag (**Only if bag is a Safe-T-Strip**) is to be moved along pipe, loosen straps, move bag, re seal to pipe using double pull zipper to pass hangers. Repeat stripping operation.
 - 3.3.3.7.6 To remove bag after completion of stripping wash top section and tools thoroughly. Seal off waste in lower section of bag using zipper. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water.

Remove second strap and zipper. Fold over into appropriately labelled waste disposal bags and seal.

3.3.3.7.7 Prior to removal of bag ensure that pipe is free of all residue. Remove all residue using wet cloths as necessary. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow drying sealer to seal in any residual fibres.

3.3.3.7.8 Upon completion of work, cover exposed ends of remaining pipe insulation with polyethylene tape.

3.3.3.7.9 If the glove bag is ripped, cut or opened in any way, work that may disturb friable material shall cease immediately. If the rip, cut or opening is small and easy to repair then the glove bag shall be repaired forthwith with tape. Work may continue once the repairs are complete. If the rip, cut or opening is not small and cannot be easily repaired, place the glove bag forthwith in a suitable asbestos waste container. Any spilled material containing asbestos shall be cleaned up and removed by using a vacuum equipped with a HEPA filter.

3.3.3.8 All work will be subject to visual inspection and air monitoring. Any contamination of surrounding areas indicated by visual inspection or air monitoring will require the complete enclosure and clean-up of affected areas.

3.3.4 Cleanup:

3.3.4.1 Frequently during the work and immediately after completion of the work clean up dust and waste containing asbestos using a HEPA vacuum or by damp mopping.

3.3.4.2 Place dust and waste containing asbestos in sealed dust tight waste bags. Drop sheets and disposable protective clothing shall be treated as asbestos waste and shall be wetted and folded inward to contain dust and then placed in waste bags.

3.3.4.3 Glove bags, disposal bags, dropsheets, cloth rags and any porous materials are to be considered as asbestos waste and handled according to disposal subsection.

3.3.4.4 Immediately before their removal from the work area, and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.

3.3.4.5 Seal and remove double bagged waste from site. Dispose of in accordance with procedures specified in section 1.15.

3.3.4.6 Perform final thorough cleanup of work areas and adjacent areas affected by the work using HEPA vacuums.

3.4 **Type 3 Removal Operation**

3.4.1 Initial Preparation and Isolation of Work Areas: Unless otherwise specified, work carried out as part of this phase shall proceed as follows:

3.4.1.1 Carry out a survey of the work areas to compile an inventory of existing damages and provide a copy to the Environmental Consultant.

3.4.1.2 The Contractor is responsible for moving materials and objects which are present in the work areas.

3.4.1.3 Separate the asbestos removal work areas from other areas in the building required to remain in use by erecting floor to ceiling hoarding walls constructed of wood stud frames, plywood sheets and polyethylene sheeting (where specified). All joints formed between plywood sheets and between plywood sheets and other objects and building components shall be sealed air tight using a surface film forming type sealer and duct tape. Seal both edges of hoarding walls with caulking around fixtures and at walls and floors.

3.4.1.4 All surfaces, equipment and objects located in the work areas and not scheduled for removal shall be pre-cleaned by HEPA vacuuming or wet wiping and shall be protected by one layer of rip proof poly sheeting unless otherwise specified. Dry sweeping or vacuuming with units not equipped with HEPA filters shall not be allowed.

- 3.4.1.5 All equipment, objects and articles scheduled for removal shall be taken out of the work area only if its removal will not disturb any asbestos-containing materials.
- 3.4.1.6 Ensure that smoke detectors, fire alarms, heat detectors and other life safety equipment remain active and operating as installed.
- 3.4.1.7 All specified clean demolition work can be carried out before the Type 3 enclosure is set up on condition that the demolition work does not disturb any asbestos-containing materials.
- 3.4.1.8 Construct the decontamination enclosure systems for workers and for equipment and materials as specified.
- 3.4.1.9 Build tunnels and platforms in all locations in the work areas as specified and seal properly.
- 3.4.1.10 Independently seal off all openings leading to the work area using polyethylene sheeting and duct tape. Such openings include, but are not limited to, windows, doorways, corridors, skylights, diffusers, grills and air ducts. Also seal all floor openings independently before covering the entire floor with polyethylene sheeting. Ensure that the individual seals are air tight and water tight.
- 3.4.1.11 Cover floors with one layer of fibre reinforced polyethylene sheeting and seal with duct tape. Poly on the floor shall extend a minimum of 30 cm up all vertical surfaces located in the work area.
- 3.4.1.12 Cover walls with one layer of fibre reinforced polyethylene sheeting (unless specified otherwise). Overlap floor poly with wall poly by a minimum of 30 cm at each layer. The layers of wall poly shall always overlap the layers of the floor poly.
- 3.4.1.13 Ensure that adjoining sheets of poly used on walls and floors overlap by at least 30 cm.
- 3.4.1.14 Ensure that poly sheets are properly supported to avoid excessive billowing and failure of the enclosure as a result of applying negative pressure differential. Brace the poly in case of excessive billowing using 1"x2" straps.
- 3.4.1.15 Use flame resistant polyethylene sheeting near heat sources.
- 3.4.1.16 Create negative pressure in the work area using HEPA-filtered negative air unit distributed evenly (horizontally and vertically) within the work area. Supply any necessary platforms as required to elevate the negative air unit.
- 3.4.1.17 Provide enough negative air units to be able to exchange the air volume of the work area at least once every 20 minutes (three air changes per hour) and to maintain a minimum of 0.02" water gauge differential.
- 3.4.1.18 The pressure differential shall be continuously monitored using an automatic recorder as specified. Place the monitor outside the contaminated work area. A backup negative air unit shall be set up and ready for operation in case one of the original units fail.
- 3.4.1.19 Operate the negative air units from the start of the preparation and isolation phase until completion of the final clean-up work and air testing.
- 3.4.1.20 Ensure that the necessary make up air is supplied to the work area through flaps installed in the perimeter seal.
- 3.4.1.21 Replace pre-filters and HEPA filters as necessary to maintain the proper flow rate and to ensure that the unit continues to function properly.
- 3.4.1.22 Contaminated air from the work area shall be exhausted directly to the outside through sealed ducts. Where necessary, remove existing windows and replace with a plywood panel. Secure panel in place and make weather tight using caulking. Install appropriately sized openings for exhaust (typically 12"). Replace windows upon completion of work.
- 3.4.1.23 All negative air units which are set up to discharge inside the building shall be leak tested in place using the DOP method.

- 3.4.1.24 The Contractor is allowed to connect to the owner's existing water supply for use in the asbestos work areas and in the temporary shower and decontamination facilities. The Contractor shall be responsible for making all the connections using vacuum breakers and other backflow preventers.
- 3.4.1.25 The Contractor shall use copper pipes and fittings and high pressure hoses when making connections to the main water supply. The Contractor shall also install a main shut-off valve on the clean side of the decontamination enclosure. All connections shall be made downstream from the main shut-off valve. Ensure that the pressure in the temporary water distribution system is relieved if the system is to be left unattended. Ensure that no leaks are present around hose pipe connections. Minimize the possibility of water damage through spills or leaks by providing drip pans of suitable size and by ensuring that the drip pans are drained regularly.
- 3.4.1.26 Ensure that all water from the drainage facilities installed on the shower and other decontamination enclosures is passed through filtration systems as specified.
- 3.4.1.27 Test all temporary piping installed during this project and ensure that they are watertight. All temporary pipe installation shall remain water tight for the duration of the project. Pipes shall be installed parallel to walls and shall be temporarily secured to existing structures. Ensure that all piping is removed upon completion of work. Avoid damaging or altering the owner's existing water equipment and piping.
- 3.4.1.28 All electrical work shall be performed by a licensed electrician in compliance with all applicable regulations. Isolate, disconnect and lockout all power supplying or passing through the work area. Ensure that power supply to the remaining areas of the building is not disrupted during work in asbestos contaminated areas.
- 3.4.1.29 Unless specified, the use of the existing power and lighting circuits shall not be allowed. Use temporary electrical panels to provide power and lighting to the decontamination facilities and the work area. One electrical panel shall be provided for every 5000 square feet of contained asbestos work areas. Electrical panels shall be equipped and sized to handle all electrical equipment required for the completion of the project. The Contractor shall also be required to provide other additional electrical equipment such as temporary lighting, circuit breakers, panels, transformers and switch gears. The contractor is responsible for determining the location of the main panel in the building for their connections. The panels used by the contractor shall be compatible with the electrical systems in the building.
- 3.4.1.30 The contractor shall be responsible for establishing and maintaining fire and emergency exits from the work area that are acceptable to the Provincial Fire Marshall and other authorities having jurisdiction. The emergency exits shall be sealed in a manner that will not hinder the use of the doors during an evacuation and shall be clearly marked by using proper exit signs.
- 3.4.1.31 Battery powered emergency lighting shall be installed by the Contractor to provide general lighting throughout the work area in case of loss of power supply to the ground fault panel and to ensure that the emergency exits and the exit routes remain lit during the power failure.
- 3.4.1.32 Ensure that fire extinguishers are installed throughout the asbestos work area at each of the emergency exits and on both sides of the decontamination facilities. All fire extinguishers installed inside the work area shall be protected by clear polyethylene sheets and shall be easily accessible in case of an emergency.
- 3.4.1.33 The Contractor shall place warning signs at all access points leading to the contained work area. The signs shall be posted at the curtained doorways and shall read:

CAUTION
ASBESTOS HAZARD AREA
NO UNAUTHORIZED ENTRY
WEAR ASSIGNED PROTECTIVE EQUIPMENT
BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM

- 3.4.1.34 Once the initial clean preparation and isolation of the work area is completed, the Contractor shall request an inspection from the Environmental Consultant before proceeding to next phase. Notify the Environmental Consultant 24 hours before the inspection is needed.
- 3.4.1.35 Once authorization is obtained from the Environmental Consultant, proceed to setting up critical seals that might become accessible once removal operations commence.
- 3.4.1.36 Shut off and lock out the HVAC system serving the subject work area. Ensure that all work requiring the complete shutdown of the HVAC system is carried out during the time when the building is not occupied.
- 3.4.1.37 Set up the upper seal using two layers of rip proof poly sheets. One end of the poly sheets shall be tapped to the underside of the deck. The other end shall be fastened to the top of the lower work area perimeter seal. Ensure that the upper seal is airtight by sealing all opening around objects present in the ceiling space. Use smoke tubes to test the integrity of the seals after restarting the HVAC system for the rest of the building.
- 3.4.1.38 Unless otherwise specified, all electrical systems scheduled to remain inside the work area during asbestos removal activities shall be sealed using duct tape and poly sheets. Examples of such systems include speakers, wiring, smoke and heat detectors, alarm equipment, communication systems, PA systems, junction boxes, etc.
- 3.4.1.39 Once all the preparation work is complete, the contractor shall ensure that the work area is maintained neat and organized. All the enclosures shall be inspected by the supervisor before and after the completion of each work shift to ensure that the hoarding walls, polyethylene barriers and enclosures are intact. Any damaged discovered during the inspection shall be repaired immediately. Maintain an inspection log book on site to document when (date and time) the inspection was carried out and by who (name and signature of the person). Summarize any problems encountered during the inspection.
- 3.4.1.40 Ensure that the negative air units and the associated ducting and exhaust openings are regularly inspected during the work shift. The pressure differential monitoring unit shall be also inspected regularly during the work shift to ensure that the specified negative pressure inside the work area is maintained.
- 3.4.2 Entry and Exit Procedures from Asbestos Removal Work Areas: the following general procedures shall be adhered to when entering into and exiting from asbestos abatement work areas:
- 3.4.2.1 Work Area Entry Procedures:
- 3.4.2.1.1 Every worker and visitor planning to enter the work area shall remove all street clothing including undergarments and shall store them in the clean change room.
- 3.4.2.1.2 All uncontaminated articles such as clothing, footwear, towels, personal effects, etc. shall be store in the clean room of the decontamination facility.
- 3.4.2.1.3 The person shall then put on disposal coverall with head covering, respirators with clean filters and foot covering and shall proceed to the work areas through the shower and then the equipment and access room.
- 3.4.2.2 Work Area Exit Procedures:
- 3.4.2.2.1 Using HEPA vacuuming or wet wiping, remove all gross contamination from personal protective equipment (disposable coveralls, boots, hard hats, safety glasses, exterior of respirator, etc.) in the work area and then proceed to the equipment and access room.
- 3.4.2.2.2 In the equipment and access room, remove all protective clothing except the respirator and proceed to the shower. All disposal contaminated clothing shall be placed in asbestos disposal bags. Reusable items shall be stored neatly in the equipment and access room for use during the next shift.
- 3.4.2.2.3 Proceed naked to the shower while still wearing the respirator. While showering, clean the outside of the respirator with soap and water. Seal the openings in the filter as per the manufacturer's instruction or using duct tape. Alternatively, the filters can be disposed of as asbestos waste.

Continue showering by thoroughly wetting and washing the body and the head. Wet and clean the inside of the respirator. Filters shall not be allowed in the clean room if not properly sealed.

3.4.2.2.4 Upon completion of showering and drying off, proceed to the clean room and dress in street clothing.

3.4.3 Asbestos Removal Procedures

3.4.3.1 Asbestos removal work shall not commence until the following requirements have been met:

3.4.3.2 All work areas have been and contained as specified, decontamination enclosure systems have been set up and occupied areas of the building have been properly isolated.

3.4.3.2.1 All required notifications have been made and a notice of project have been posted in a visible area.

3.4.3.2.2 Warnings signs have been displayed at all potential access points into the work area.

3.4.3.2.3 All arrangements have been made with the waste disposal facility.

3.4.3.2.4 All equipment, materials and tools needed inside the work area are available and in working condition.

3.4.3.2.5 Appropriate negative pressure differential have been established inside the work area with proper allowance for makeup air.

3.4.3.2.6 All building security arrangements have been made.

3.4.3.2.7 Written authorization has been obtained from the Environmental Consultant to commence asbestos removal work.

3.4.3.3 Using an airless sprayer, spray the asbestos-containing material with water mixed with a wetting agent. Apply enough amended water to ensure that the material is wet all way through to the substrate. Avoid dripping. Etch the surface of the material being wetted in cases were the water does not penetrate the outer layer of the material.

3.4.3.4 Remove the wet asbestos-containing materials in layers and/or small sections while maintaining exposed surfaces of insulation in a wet condition. Spray the material regularly throughout the removal work to maintain saturation and to minimize the generation and dispersion of dust. Ensure that the wet material does not dry out.

3.4.3.5 Ensure that the removed material and other waste generated during the removal process is collected and bagged immediately. Place the material in yellow labelled bags. Ensure that the waste water is also collected regularly. Avoid pooling of water. Dispose of the waste water in labelled 6 mil polyethylene bags (or other suitable rigid containers) or pump it straight into the sanitary sewer after passing it through the specified two stage filters. Refer to Section 3.3.4 for specific procedures for handling of materials and waste.

3.4.3.6 Mist the air during the removal process using an airless sprayer capable of producing a fine mist and amended water to keep the airborne fibres levels as low as possible. Monitor the air inside the work area during removal. Airborne fibre levels in excess of 2.5 fibres/cc requires the utilization of more airless sprayers.

3.4.3.7 Remove deck mounted objects and other obstructions as necessary to facilitate the removal of the asbestos-containing materials. Ensure that the removal work includes all asbestos-contaminated materials specified for removal.

3.4.3.8 After completion of gross asbestos removal work, perform a more thorough cleaning of all surfaces that used to be covered by asbestos to remove all visible residue and fibrous materials. Cleaning shall be carried out using wire brushing (stiff bristle brushes such as nylon or fibre bristles not metal), wet sponging and vacuuming. Ensure that the surfaces remain wet during the performance of this work.

3.4.3.9 Notify the Environmental Consultant in cases where asbestos-containing materials is encountered which cannot be properly removed without demolishing building structural members or removing major service elements. The Environmental Consultant will advise the Contractor in writing regarding

the next course of action. If sealing the material in place is the recommended course of action, apply a penetrating sealer onto the material and ensure that it penetrates all the way to the substrate.

3.4.3.10 Continue with the wet thorough cleaning activities and include other surfaces in the work area including, but not limited to, decontamination facilities, polyethylene sheeting, walls and floor surfaces, equipment, containers, piping, ducts, conduits and poly surfaces used in the equipment and access room and the equipment decontamination facilities. Pre-filters used on the negative air units shall be removed and shall be disposed of as asbestos waste.

3.4.3.11 Request a visual clearance inspection by the Environmental Consultant once all the cleaning activities are completed. The level of cleanliness shall be acceptable to the Environmental Consultant before a written authorization is issued to apply the lock-down material.

3.4.4 Procedures for Handling of Materials and Waste

3.4.4.1 Seal all filled asbestos waste containers and clean the exterior of the containers and other items by wet sponging. Move the containers from the filling area to a temporary storage area located within the enclosure and close to the equipment waste decontamination facility.

3.4.4.2 Move the item to the container cleaning room, clean by wet sponges and pass it through the curtained doorway to a second worker stationed in the holding room. The second worker shall be fully protected (similar to the removal workers) and can only leave by going through the work area and exiting through the worker decontamination facility (after taking a shower). The second worker shall then clean or double bag and seal the item and shall pass it through the curtained doorway to a third worker stationed in the transfer room. The third worker enters the transfer room from the clean side and does not need to use personal protective equipment. The third worker is then responsible for transferring the item to the disposal bin or to the Contractor's temporary storage room or truck.

3.4.4.3 All waste generated within the asbestos work area shall be treated as asbestos-contaminated waste and shall be disposed of accordingly. Non-porous materials which can be properly washed and cleaned can be disposed of as normal waste after cleaning.

3.4.4.4 The contractor shall use a combination of a rigid container with 6 mil poly bag to transport and dispose of waste containing sharp materials which could rip two 6 mil poly bag.

3.4.4.5 Transportation of waste and materials through occupied areas of the building shall be limited to a time when the building is not occupied. The Contractor shall use covered carts to transport the waste inside the building. Predetermined transport routes shall be approved by the Environmental Consultant. Workers transporting the waste shall be equipped with spill kits and full personal protective equipment and shall be trained to contain and clean any spilled asbestos-containing materials resulting from a failure in the waste containers.

3.4.4.6 Ensure that waste transport routes, loading areas and garbage bin storage areas are kept clean at all times. Garbage bins shall be of the fully enclosed type and shall be locked at all times when not in use. Garbage bins shall be placed only in locations specified and approved by the Owner or his representative.

3.4.4.7 Schedule garbage bin pick up and drop off times in consultation with the Environmental Consultant and ensure that the scheduled times do not interfere with the operations of the building Owner of his tenants.

3.4.4.8 Transport and dispose of asbestos waste as specified in Section 1.15

3.4.5 Procedures for Locking-Down of Work Area

3.4.5.1 Upon completion of clean-up operations and after receiving written authorization from the Environmental Consultant to proceed, apply a lock-down agent acceptable to the Environmental Consultant on all surfaces in the work area such as areas where asbestos materials has been removed, pipes, ducts and other exposed objects present in the work area, polyethylene sheeting and other exposed walls, ceilings and floors, etc. Ensure that the sprayed material covers all surfaces. Apply twice as much lock-agent on areas that used to be covered by asbestos-containing materials.

- 3.4.5.2 Ensure that proper respiratory protective equipment is used during the application of the lock-down agent since, depending on the nature of the sealer used, potentially hazardous materials could be generated during the application process.
- 3.4.5.3 Restrict access to the work area for a period of 24 hours after completion of the lock-down application to allow for the dust to settle and for the lock-down agent to dry off. Clearance air samples will then be collected inside the work area.
- 3.4.5.4 The work area shall be considered acceptable for public occupancy only if the airborne fibre levels inside the work area are less than 0.01 fibres/cc. Levels above 0.01 fibres/cc requires that the entire area be re-cleaned and another coat of lock-down agent be applied by the Contractor on all surfaces in the work area. Re-sampling will be carried out and the entire process shall be repeated until the fibres levels are less than 0.01 fibres/cc.
- 3.4.5.5 The Contractor shall be responsible for all charges associated with re-cleaning work and other associated requirements as specified.
- 3.4.6 Procedures for Work Area Teardown and Dismantling
- 3.4.6.1 Proceed with the teardown of the work area only after obtaining written authorization from the Environmental Consultant. Ensure that Type 3 procedures remain in effect during this phase of work. The worker and equipment and material decontamination units shall remain fully operational. The negative air units shall continue to operate throughout the duration of the teardown work.
- 3.4.6.2 Start by removing polyethylene sheeting by carefully folding it away from the walls to the centre of the work area making sure that any loose debris is trapped within the poly. Also remove all enclosures, duct tape, caulking, polyurethane foam and other materials used in setting up the enclosure. Ensure that one layer of polyethylene sheeting is kept in place in situations where re-application of fireproofing is required. Polyethylene and other materials used in setting up enclosures shall be disposed of as asbestos-contaminated waste.
- 3.4.6.3 Clean all vacuum units, fittings, hoses and other small tools used during the removal work inside the work area, seal in 6 mil poly bags and remove from the work area through the equipment and materials decontamination unit. Wash down and clean other equipment used during the work and remove from the work area.
- 3.4.6.4 Clean up the asbestos work area including all surfaces and all decontamination enclosures. Remove negative air units pre-filters and dispose of as asbestos waste. Seal the exterior of the unit on all sides with poly and remove from the work area.
- 3.4.6.5 Remove all waste bags containing polyethylene sheets and other materials used to set up the enclosures and dispose of as specified.
- 3.4.6.6 Remove all hoarding walls separating the work area from occupied areas except in locations where the walls are set up adjacent to other areas that still contain asbestos. Obtain approval of Environmental Consultant before dismantling hoarding walls.
- 3.4.6.7 Dismantle the remainder of the enclosure including scaffolding, platforms, decontamination facilities, tunnels, etc. Final clean the work area using HEPA vacuuming and wet wiping. Clean and remove all ground fault panels and temporary lighting.
- 3.4.7 Procedures for Re-Establishment of Objects and Systems
- 3.4.7.1 Re-establish mechanical and HVAC systems and install new clean air filters where previously removed. Re-establish all electrical system and return to as found condition unless otherwise specified.
- 3.4.7.2 Repair, replace and make good on all damages not identified during the per-removal survey.
- 3.4.7.3 Unless otherwise specified, all items and objects removed during the various phases of the work shall be returned to their original position and shall be properly mounted and secured.

END OF SECTION

Section 02082 Site Work – Lead Abatement

PART 1 – GENERAL

1.1 **General Conditions and Related Work**

- 1.1.1 This section forms a part of the Bid Document and should be read in conjunction with all other Sections and Divisions in order to comply with the requirements of the General Conditions of the Project.
- 1.1.2 It is the intent that work performed as outlined in this section will result in the complete removal and disposal or decontamination of all lead-containing materials, existing lead-contaminated materials and materials and/or surfaces that become contaminated by lead as a result of the work specified by this Section. The referenced materials include construction materials (paints, and coatings), existing structures, building components, and debris.
- 1.1.3 Removal of identified hazardous materials shall be carried out in accordance with Occupational Health and Safety Act and the following requirements:
- 1.1.3.1 Ontario Ministry of Labour Guideline: Lead on Construction Projects (issued September 2004, updated April 2011);
- 1.1.3.2 Designated Substance Regulation, O. Reg. 490/09; and
- 1.1.3.3 Regulation for Construction Projects, O. Reg. 213/91.
- 1.1.4 Dispose of all waste as specified in applicable sections of the specifications document.
- 1.1.5 The consultant may perform area and personal air monitoring to verify the adequacy of the respirators used by the contractor and effectiveness of dust suppression methods. Contractor's personnel shall co-operate with the consultant during the collection of the air samples.
- 1.1.6 Provide all equipment, material, services, supervision and labour required or specified to complete the scope of work of this project as described in the Project and Specifications Documents.
- 1.1.7 Provide and maintain, in compliance with applicable regulation, codes and by-laws, sanitary temporary water closets and washbasins for use of workers.
- 1.1.8 The contractor shall inform the consultant upon discovery of additional hazardous materials during abatement operation procedures.

1.2 **Description of Work**

- 1.2.1 Before submitting a bid, confirm the scope of work of the project by visiting the site and reading the entire Bid documents. The information presented is for general information purposes and should not be used as the only basis for submitting a bid. It is the contractor's responsibility to verify the quantities of the materials to be removed.
- 1.2.2 **Work Area 2: Removal or Disturbance of Lead-Containing Paints Throughout the Project Areas:** Work in the area shall be carried out using Type 1 Operation procedures (Section 02082, Sub-Section 3.1) or Type 2 Operation procedures (Section 02082, Sub-Section 3.2) as follows:
- 1.2.2.1 Remove all moveable objects from the work area.
- 1.2.2.2 Ensure that the work area is separated from the surrounding public area using barriers or temporary fences and warning signs.
- 1.2.2.3 Protect the floor in the work area with rip-proof poly sheeting.
- 1.2.2.4 Pre-clean all stationary objects and items present in the work area using vacuum units equipped with HEPA filters and wet wiping.

- 1.2.2.5 Remove and dispose of the lead-containing light grey, grey, brown and black paints throughout the project areas, as required to accommodate the Interior Door Replacement Project.
- 1.2.2.6 For chemical removal of lead-containing light grey, grey, brown and black paint from surfaces, use odour-free paint dissolving products, as required, to ensure all materials have been removed. The work shall be done only by means of non-powered hand held tools, no sanding or scraping, and wetted to control the spread of dust. The use of any alternative method of removal shall be discussed with the Environmental Consultant before the bid closing period. The Environmental Consultant shall have the final approval regarding any new proposed methodology.
- 1.2.2.7 The material specified for removal contains lead. Half-face negative pressure respirators equipped with P100 filter cartridges shall be worn.
- 1.2.2.8 Clean the area after abatement.
- 1.2.3 Return each of the work area to as found conditions.

1.3 Definitions

- 1.3.1 Abatement: Procedures to control dust migration from lead-containing construction materials, existing structures, building components, and debris from manufacturing processes involving lead. Includes cutting, blasting, welding, burning, and removal.
- 1.3.2 Air Monitoring: The process of measuring the lead content in a specific volume of air (mg/m³) in a stated period of time.
- 1.3.3 Airtight: Prohibiting air movement between contaminated area(s) and control area(s) during ingress and egress the work area, consisting of two curtained doorways at least 6 feet apart.
- 1.3.4 Ambient Air Monitoring: Sampling for airborne concentrations of lead adjacent to the Work Area.
- 1.3.5 Authorized Visitor: The building Owner or his representative, persons of any regulatory or other agency having jurisdiction over the project and the lead abatement Consultant or his representative.
- 1.3.6 Barrier: An obstruction (wall, ceiling, floor) that separates work area(s) from adjacent control area(s) to prevent cross contamination.
- 1.3.7 Chemical Stripping Agent Neutralizer: Chemical stripping agent neutralizers may be used on exterior surfaces only. Neutralizers shall be compatible with and not harmful to the substrate that they are applied to and the stripping agent that has been applied to the surface substrate.
- 1.3.8 Chemical Stripping Removers: Chemical removers shall contain no methylene chloride products and shall be compatible with and not harmful to the substrate that they are applied to.
- 1.3.9 Contractor/Supervisor: An individual who supervises lead abatement work and has the proper qualifications and training as specified in this document.
- 1.3.10 Control Area: An area which is considered uncontaminated and is suitable for regular occupancy.
- 1.3.11 Critical Barrier: One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne lead in a regulated area from migrating to an adjacent area.
- 1.3.12 Curtained Doorway: An access point to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, constructed by placing two overlapping sheets of rip-proof plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. The free bottom edge of the plastic sheets shall be weighted to ensure proper closure. The plastic sheets shall overlap by no less than 1.5 meters.
- 1.3.13 Demolition: The razing, removing or wrecking of any building component, assembly or system together with any associated handling operations.

- 1.3.14 Decontamination Area: An enclosed passage-way adjacent and connected to the work area and consisting of a dirty room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with lead dust and/or debris.
- 1.3.15 Diocetylphthalate (DOP) Test: A test method that uses Diocetylphthalate aerosol to challenge a HEPA filter-equipped negative pressure unit to determine its integrity and effectiveness to filter out lead dust, fume or mist.
- 1.3.16 Dirty Room: A contaminated area or room which is part of the worker decontamination enclosure system, with storage for contaminated clothing and equipment.
- 1.3.17 Disposal: Procedures necessary to transport and dispose of the lead contaminated material(s) stripped and removed from the work area(s) at an approved waste disposal site in compliance with the applicable environmental regulations.
- 1.3.18 Disposal Bag: A 0.15 mm 6 mil thick, leak-tight polyethylene bag used for transporting lead waste from containment into a lead waste container for disposal.
- 1.3.19 Disturbance: Activities that disrupt the matrix of Lead or generate visible dust and debris.
- 1.3.20 Emery 3004 – a compound (a poly-alpha olefin) that may be substituted for DOP in HEPA filter testing.
- 1.3.21 Encapsulation: Procedures necessary to coat all lead-containing materials with an encapsulate to control the possible release of lead dust, fume, or mist into the ambient air.
- 1.3.22 Enclosure: All herein specified procedures necessary to complete the enclosure of all lead-containing material and dust behind airtight, impermeable, permanent barriers.
- 1.3.23 Filtration System for Water: A multistage system for filtering water from the decontamination shower and wastewater. The system is usually manufactured with two filters: a primary filter and a secondary filter. The primary filter collects and retains particles that are 20 microns or larger and the secondary filter removes particles that are 5 microns or larger.
- 1.3.24 HEPA Filter Equipment: High efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining lead dust, fume, or mist. Filters shall be capable of trapping and retaining at least 99.97 percent of 0.3 micrometer diameter particles.
- 1.3.25 Lead: The term includes elemental lead, and/or inorganic and organic lead compounds derived from chemically treated and/or altered elements (i.e. paints, plastics, pigments, glasses, and rubber compounds).
- 1.3.26 Lead Cleaning Agent: A cleaning agent suitable for lead dust. Acceptable detergents include products with a high phosphate content (containing at least 5% trisodium phosphate) and/or phosphate-free lead dissolving agents such as Ledisolv™ or similar product.
- 1.3.27 Lead-Containing Material: Any material analyzed and found to have a detectable concentration of lead.
- 1.3.28 Lead Leachate Material: Any material analyzed and found to have a concentration equal to or greater than 5.0 milligrams per litre (mg/l) or 100 milligrams per kilogram (mg/kg)/ micrograms per gram (µg/g) as per O. Reg. 558, Schedule 4, *Leachate Quality Criteria*, February 2001.
- 1.3.29 Lead Surface Contamination: Any surfaces analyzed and found to have a concentration equal to or greater than 40 micrograms per square feet (µg/ft²) or 4 micrograms per 100 square centimetres (µg/cm²) for floors, 250 µg/ft² (25 µg/cm²) for window sills, and 400 µg/ft² (40 µg/cm²) for window troughs as per the U.S. Environmental Protection Agency (EPA) Lead, *Identification of Dangerous Levels of Lead*, Final Rule, January 2001 (40 CFR Part 74).
- 1.3.30 Lead Waste Container: An impermeable container acceptable to a disposal site and Ministry of the Environment. It shall be labeled as required by the Ministry of the Environment and Transport Canada.

- 1.3.31 Lead Work Area: An area where lead removal operations are performed which is isolated by physical boundaries to prevent the spread of lead dust or debris.
- 1.3.32 Negative Pressure Fan System: An air purifying fan system located within or outside the isolated work area, which draws air out of the work area through a HEPA filter and discharges this air directly to the exterior of the building, thus keeping the static air pressure in the work area lower than in adjacent areas and preventing infiltration of contaminated air from work area to adjacent areas. This system shall be equipped with an alarm to warn of system breakdown, shall maintain a minimum pressure differential of 0.03" water gauge relative to adjacent areas outside of work area(s) and shall be equipped with an instrument to continuously monitor and automatically record pressure differences.
- 1.3.33 Negative Pressure Respirator: A respirator in which the air inside the respiratory inlet covering is negative during inhalation in relation to the air pressure of the outside atmosphere and positive during exhalation in relation to the air pressure of the outside atmosphere.
- 1.3.34 Powered Air Purifying Respirator (PAPR): A full-face mask into which filtered air is pumped at approximately 100 – 150 litres per minute (4 – 6 cubic feet per minute). The PAPR consists of a full-face mask, a battery pack, an air pump, high efficiency filter and hoses.
- 1.3.35 Personal Monitoring: Sampling of airborne lead concentrations within the breathing zone (within 12 inches of the mouth) of a worker.
- 1.3.36 Personnel: Supervisors, Contractor employees, subcontractor employees.
- 1.3.37 Positive Pressure Respirator: A respirator that maintains a positive pressure inside the facepiece during inhalation and exhalation in relation to the atmospheric pressure.
- 1.3.38 Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure system which supplies hot and cold running water for complete showering practices during decontamination. The shower room provides an airtight barrier between contaminated and clean areas.
- 1.3.39 Supplied-air Respirator – an accepted respirator and air-supply hose with a hood/helmet, a tight fitting face-piece that is supplied with compressed breathing air from a compressed breathing air system.
- 1.3.40 Tape-Sealed Polyethylene Sheets: Rip-proof polyethylene sheets or polyethylene sheets of type and thickness as specified, sealed with tape along the edges, around objects, over cuts and in other locations as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage and damage by sealant and to prevent the escape of lead dust, fume or mist through the sheeting into a clean area.
- 1.3.41 Wet Cleaning: The process of eliminating lead dust and/or debris from building surfaces and objects by using cloths, mops, or other cleaning tools dampened with a lead cleaning agent.
- 1.3.42 Work: Includes all labour, supervision, materials and equipment required for the complete execution of the project as specified in the project.
- 1.3.43 Work Decontamination Enclosure System: A decontamination system for workers, consisting of a clean room, a shower room, and an equipment room. One entrance to the clean room shall be outside of the contaminated area. One entrance to the equipment room shall be connected directly to the contaminated area.
- 1.4 Work Schedule**
- 1.4.1 It is the responsibility of the contractor to provide the necessary manpower and work shifts to meet the schedule as specified below:
- 1.4.2 The Contractor shall, at no extra cost to the owner, be responsible for the completion of work required or scheduled to be performed on weekends, holidays and after regular hours and shall be carried out as required to meet the schedule specified.

- 1.4.3 The start date and work hours for the project are to be determined by the PDSB.
- 1.4.4 In all situations where the Contractor fails to meet the specified schedule, the Contractor shall pay all costs of inspection and air monitoring by the Consultant.

1.5 Quality Assurance

- 1.5.1 Ensure that work progresses according to schedule.
- 1.5.2 Ensure that work complies with all the requirements of the applicable regulations, guidelines and manuals.
- 1.5.3 Ensure that no water runoff or airborne lead contaminates control area(s) outside the lead removal work area(s). The Consultant has been given authorization by the Owner to stop any work where contamination of control area(s) is suspected. The Contractor shall be responsible for all costs to rectify the problem.
- 1.5.4 Use only skilled and qualified workers for all trades required to work on this project.
- 1.5.5 Only the lead abatement Contractor, and never the Consultant, is responsible for the following:
- 1.5.5.1 Safety programs and precautions required by applicable regulations for the work being performed.
- 1.5.5.2 Control over the acts and omissions of the Contractor's workers, agents, subcontractors and other employees of the Contractor required to perform work on the project.
- 1.5.5.3 Control over construction techniques, methods, means or procedures.

1.6 Regulations

- 1.6.1 The Contractor shall comply with all local, provincial and federal requirements (regulations, codes, standards and guidelines) relating to lead and other work activities being carried out.
- 1.6.2 In case of conflict among the above mentioned requirements or with these specifications, the more stringent requirements shall apply.
- 1.6.3 Perform work following the requirements of the various regulations in effect at the time the work is being carried out.
- 1.6.4 The regulations, codes, standards and guidelines shall include, but are not limited to:
- 1.6.4.1 Ontario Occupational Health and Safety Act.
- 1.6.4.2 Ministry of Labour Occupational Health and Safety Act requirements for construction projects including Ontario Regulation 490/09 Designated Substances.
- 1.6.4.3 Ministry of Labour Occupational Health and Safety Act Ontario Regulation 213/91 Construction Projects, as amended to O. Reg. 628/05.
- 1.6.4.4 Ontario Ministry of Labour; Guideline: Lead on Construction Projects, Occupational Health & Safety Branch, April 2011..
- 1.6.4.5 The U.S Department of Housing and Urban Development; Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, June 1995.
- 1.6.4.6 The U.S Department of Housing and Urban Development; Identification of Dangerous Levels of Lead, January 2001.
- 1.6.4.7 Ontario Ministry of Environment Regulations for the disposal of hazardous waste, including R.R.O. 1990, Regulation 347 General – Waste Management, as amended to O. Reg. 326/03.
- 1.6.4.8 Federal Transportation of Dangerous Goods Act, 1992 and associated federal Transportation of Dangerous Goods Regulation, SOR/DORS/2001-286 and the Ontario Dangerous Goods Transportation Act, R.S.O. 1990 Chapter D.1.

1.6.4.9 WHMIS Regulations.

1.7 Supervision

1.7.1 The Contractor shall provide a trained and qualified shift supervisor for each and every shift during which lead removal and clean-up is being carried out. The Owner reserves the right to stop all work if this requirement is not complied with, at no additional charge to the Owner.

1.7.2 The qualification of the supervisor shall meet the requirements specified under Section 1.5 Submittals above.

1.7.3 The shift supervisor shall have the authority to make decisions and take actions with respect to production, manpower and equipment.

1.7.4 Obtain approval from the Owner or his representative before replacing supervisory personnel.

1.7.5 At the request of the Owner or his representative, the Contractor shall, without asking for explanation, replace supervisory personnel with 2 days from receiving the Owner's written request.

1.8 Notifications

1.8.1 The Contractor shall be responsible for immediately notifying the following, orally and in writing, prior to any work on this project commencing:

1.8.1.1 The land fill site which agreed to accept the waste as per the requirements of Regulation 558/00.

1.8.1.2 The Fire Marshall, in cases where the execution of the work will result in blocking building exists or when turning off, removing or temporarily altering fire alarms.

1.9 Proscriptions

1.9.1 The use of motorized lift equipment in the work area(s) is not allowed.

1.9.2 The use of compressed air for removal or clean-up of lead dust and debris from any surface is not allowed.

1.9.3 Dry sweeping is prohibited during the removal and cleaning activities.

1.9.4 Smoking, eating, drinking or chewing is not allowed in the work area(s).

1.9.5 Unauthorized persons or persons not using proper personal protective equipment shall not be allowed to enter the work area(s).

1.9.6 No entry into the work area(s) shall be permitted to any person who has facial hair growth that prevents the establishment of a proper seal between the respirator and the skin.

1.9.7 The use of torches, propane-fired heaters and other open flames shall not be permitted in the lead work area(s).

1.10 Equipment and Material Protection and Replacement

1.10.1 Before starting the removal operations, the Contractor shall perform a survey to document existing damage in all areas where lead removal will be carried out or in areas where transportation of waste will take place.

1.10.2 The Contractor shall be responsible for protecting all equipment and materials within, and in the vicinity of, the work area(s).

1.10.3 The Contractor shall be responsible for replacing all equipment and materials that become damaged as a result of the work being carried out by the Contractor at no additional cost to the owner.

1.11 Worker and Visitor Protection

- 1.11.1 Instruct all personnel (workers and visitors) in all aspects of work procedures and protective equipment before permitting entry into the lead abatement work area(s).
- 1.11.2 A experienced person (as defined by the Occupational Health and Safety Act) shall provide all the training and instructions.
- 1.11.3 Instructions and training shall include, but shall not be limited to, the following:
 - 1.12.1.1 Entry and exit from lead abatement work area(s).
 - 1.12.1.4 Work practices and personal hygiene.
 - 1.12.1.3 The use, cleaning and care of respirators and protective clothing.
 - 1.12.1.4 Protective measures and work procedures.
- 1.9.2 Lead work area entry and exit procedures shall be posted in the clean room of the decontamination unit.
- 1.9.3 Respiratory Protection:
 - 1.12.3.1 All personnel required to wear respirators shall be fit tested.
 - 1.12.3.2 Each worker or visitor required to enter an lead abatement work area shall be provided with a personally issued respirator that is:
 - 1.9.3.2.1 Appropriate for the work that is being carried out.
 - 1.9.3.2.2 Acceptable to the Ministry of Labour, Occupational Health and Safety Division.
 - 1.12.3.3 The worker shall be responsible for wearing a respirator that is issued by the Contractor.
 - 1.12.3.4 The following criteria, as outlined in Table 1, shall be followed when selecting an appropriate respirator:

Table 1: Respirators

WORK CLASSIFICATION	REQUIRED RESPIRATOR
Type 1 Operations (<0.05 mg/m³)	
<ul style="list-style-type: none"> Application of lead-containing coatings with a brush or roller. Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap. Removal of lead-containing coatings or materials using a power tool that has an effective dust collection system equipped with a HEPA filter. Installation or removal of lead-containing sheet metal. Installation or removal of lead-containing packing, babbitt or similar material. Removal of lead-containing coatings or materials with a non-powered hand tool, other than manual scraping and sanding. Soldering. 	Respirators should not be necessary if the general procedures listed in Section 6.1 are followed and if the level of lead in the air is less than 0.05 mg/m ³ . However, if the worker wishes to use a respirator, a half-mask particulate respirator with N-, R-, or P-series filter, and 95, 99, or 100% efficiency should be provided.
Type 2a Operations (>0.05 to 0.50 mg/m³)	NIOSH Assigned Protection Factor of 10
<ul style="list-style-type: none"> Welding or high temperature cutting of lead-containing coatings or materials outdoors. This operation is considered a Type 2a operation only if it is short-term, not repeated, and if the material has been stripped prior to welding or high temperature cutting. Otherwise, it will be considered a Type 3a operation. Removal of lead-containing coatings or materials by scraping or sanding using a non-powered hand tools. Manual demolition of lead-painted plaster walls or building components by striking a wall with a sledge hammer or similar tool. 	Half-mask particulate respirator with N-, R-, or P-series filter, and 95, 99, or 100% efficiency.
Type 2b Operations (>0.50 to 1.25 mg/m³)	NIOSH Assigned Protection Factor of 25
<ul style="list-style-type: none"> Spray application of lead-coatings. 	Powered air purifying respirator equipped with a hood or helmet, and any type of high efficiency filter. Supplied air respirator equipped with a hood or helmet and operated in a continuous flow mode.
Type 3a Operations (>1.25 to 2.50 mg/m³)	NIOSH Assigned Protection Factor of 50
<ul style="list-style-type: none"> Welding or high temperature cutting of lead-containing coatings or materials indoors or in a confined space. Burning of a surface containing lead. Dry removal of lead-containing mortar using an electric or pneumatic cutting device. Removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filter. Removal or repair of a ventilation system used for controlling lead exposure. Demolition or cleanup of a facility where lead-containing products were manufactured. An operation that may expose a worker to lead dust, fume, or mist that is not a Type 1, Type 2, or Type 3b operation. 	Full-facepiece air purifying respirator with N-, R-, P-series filters, and 100% efficiency. Tight-fitting powered air purifying respirator with a high efficiency filter. Full-facepiece supplied air respirator operated in demand mode. Half-mask or full-facepiece supplied air respirator operated in continuous-flow mode.
Type 3b Operations (>2.50 mg/m³)	NIOSH Assigned Protection Factor of ≥100
<ul style="list-style-type: none"> Abrasive blasting of lead-containing coatings or materials. 	Type CE abrasive-blast supplied respirator operated in a positive pressure mode with a tight-fitting half-mask facepiece.
<ul style="list-style-type: none"> Removal of lead-containing dust using an air mist extraction system. 	Full-facepiece supplied air respirator operated in positive-pressure or other positive-pressure mode.

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- 1.12.3.5 Respiratory protection systems shall be certified by the National Institute for Occupational Safety and Health (NIOSH), the British Standards Institution or any other testing agency that is acceptable to the Ministry of Labour.
 - 1.12.3.6 Respirator shall be stored in a clean location such as the clean room of the decontamination unit. This room can also be used for charging PAPR batteries.
 - 1.12.3.7 The procedures specified by the equipment manufacturer shall be followed while using and maintaining the respirators.
 - 1.12.3.8 Respirators shall be cleaned and inspected at the end of each shift. All damaged and deteriorated parts found during the inspection shall be replaced before the respirator is used again.
 - 1.12.3.9 Appropriate combination cartridges shall be used if substances other than lead are to be handled inside the lead work area(s).
 - 1.12.3.10 Used filters shall be tested and replaced as specified by the manufacturer or as specified below. The more stringent testing and replacement protocol shall be followed.
 - 1.12.3.11 Cartridges for negative pressure respirators should be replaced every 16 hours of actual usage
 - 1.12.3.12 Cartridges for PAPRs should be replaced every 8 hours.
 - 1.12.3.13 Cartridges shall be treated as lead waste and shall be disposed of accordingly after usage inside lead work area(s).
 - 1.12.3.14 All supplied air respirators shall meet the breathing air purifying requirements in accordance with the CSA Standard Z180.1-00.
 - 1.9.4 Protective Clothing:
 - 1.12.4.1 The Contractor shall provide every worker and authorized visitor with full body disposable coveralls and disposable impervious gloves.
 - 1.12.4.2 All personnel shall wear the protective coveralls before they are allowed to enter into the lead work area(s).
 - 1.12.4.3 Coveralls shall be equipped with head covering (hood), foot covering and tight fitting cuffs at the neck, ankles and wrists.
 - 1.12.4.4 The disposable coveralls shall be made up of materials that do not readily permit the penetration of lead dust.
 - 1.12.4.5 The impervious gloves shall be suitable for handling any lead cleaning agent and/or other chemical that may be required.
 - 1.12.4.6 Disposable coveralls shall be immediately repaired (using duct tape) or replaced once torn.
 - 1.12.4.7 Disposable gloves shall be immediately replaced once torn.
 - 1.12.4.8 Coveralls and gloves shall be disposed of as lead waste once they are worn inside the lead abatement area(s).
 - 1.12.4.9 Workers are allowed to wear reusable protective clothing provided that the clothing is left in the equipment room until the end of the lead abatement project. The clothing shall then be disposed of as lead waste.
 - 1.12.4.10 Safety shoes, hard hats and additional body protection equipment shall be used as necessary to meet the requirements of applicable safety regulations.

1.10 Inspections

- 1.10.1 The lead abatement Consultant may be present on site to carry out quality control inspections for the entire duration of the project. The inspections will be performed inside and outside the work area(s).
- 1.10.2 The purpose of the inspections is to ensure that the work is being completed following the requirements and procedures outlined in the specifications documents and applicable regulations.
- 1.10.3 The Consultant will issue written instructions to the lead abatement Contractor throughout the duration of the project. The instructions will authorize the Contractor to proceed with the following phase of work. The general phases of work will consist of the following: Pre-cleaning, set-up and preparation of the work area, removal of specified materials, clean-up of work area and tear down of containment.
- 1.10.4 The Contractor shall not proceed to the next phase of work without obtaining authorization from the Consultant.
- 1.10.5 The Consultant has been given authorization by the Owner to order a work shutdown if suspect or confirmed contamination of area(s) adjacent to work area(s) has occurred.
- 1.10.6 In all adjacent area(s) where it is determined by the Consultant (through visual inspection or air monitoring) that contamination has occurred, the Contractor shall be responsible to the complete isolation and cleaning of such area(s) under the direction of the Consultant and at no extra charge to the Owner.
- 1.10.7 The Consultant has been given authorization by the Owner to ensure that the Contractor adheres to specified procedures and materials and to inspect for the lead work area(s) for final completion and cleanliness. Any additional work (including labour and material charges) specified by the Consultant to achieve a completion of work to the level specified shall be carried out by the Contractor at no additional charge to the Owner.
- 1.10.8 The Contractor shall ensure that all equipment and materials to be used on the project are acceptable to the Consultant. Unacceptable materials and equipment shall be replaced by the Contractor at no additional charge to the Owner.
- 1.10.9 The Contractor shall be responsible for all additional inspection charges which are carried out as a result of a failure by the Contractor to meet set criteria relating to schedule, health and safety and quality.
- 1.11 Air Monitoring**
- 1.11.1 Air samples may be collected by the Consultant (on behalf of the Owner) prior to, during and after the remediation activities, both inside and/or outside the lead work area(s).
- 1.11.2 The objective of air monitoring is to detect defects in the containment within the work area(s) and to ensure that any contamination of adjacent (control) areas is discovered and rectified immediately.
- 1.11.3 Any contamination of area(s) outside the limits of the lead work area(s) (as determined by air monitoring) shall be contained and shall be thoroughly cleaned to the Consultant's satisfaction. The Contractor shall be responsible for all additional charges associated with such work.
- 1.11.4 Air monitoring may be carried out according to either, or both NIOSH methods described below:
- 1.12.4.14 The latest edition of the National Institute for Occupational Safety and Health (NIOSH) Method 7082. The samples will be analyzed by the Flame Atomic Absorption Spectrophotometer technique as specified in the above noted NIOSH method.
- 1.12.4.14 The latest edition of the National Institute for Occupational Safety and Health (NIOSH) Method 7702. The samples will be analyzed by the X-Ray Fluorescence (XRF) portable technique as specified in the above NIOSH method.
- 1.11.5 The Contractor shall cooperate with the Consultant during air monitoring and shall:
- 1.12.5.14 Ensure that workers wear sampling equipment for personal samples up to the duration of an entire shift.

- 1.12.5.14 Ensure that the workers exercise care and avoid damaging the Consultant's equipment.
- 1.12.5.14 Ensure that the samples and equipment are not tampered with.
- 1.11.6 The Contractor shall be responsible for charges associated with re-sampling due to tampering with the air samples.
- 1.11.7 The Contractor shall be responsible for repair or replacement charges of testing equipment that become damaged due to the actions of the Contractor forces.
- 1.11.8 The maximum allowable concentration of airborne lead concentrations outside a lead work area(s) is 0.025 mg/m³ or 25µg/m³.
- 1.12.8.14 Results equal to or greater than the specified level will indicate lead contamination of these adjacent areas and respiratory protection is required.
- 1.12.8.14 The contaminated areas shall be isolated, contained and cleaned to the satisfaction of the Consultant in the same manner as the lead work area at no additional cost to the Owner. The airborne lead concentration shall be below 0.025 mg/m³ or 25µg/m³ after cleaning.
- 1.12.8.14 Re-occupancy air samples may be collected and analyzed by NIOSH method 7082 or 7702. The work area(s) will be considered clean and clear for public occupancy only if the airborne concentrations are less than 0.005 mg/m³ (5 µg/m³).
- 1.12.8.14 In case the concentrations are equal to or greater than 0.005 mg/m³ (5 µg/m³), the Contractor shall be responsible for re-cleaning the lead work area(s). This process will have to be repeated until the concentration levels are below the specified limit.

1.12 Wipe Sampling

- 1.12.1 Wipe samples will be collected by the Consultant (on behalf of the Owner) following a 2 hour settling period as part of the clearance inspection once the final cleaning procedures have been completed inside the work area(s).
- 1.12.2 The objective of wipe sampling is to verify the effectiveness of the cleaning procedures and to ensure that any contamination on surfaces inside the lead work area(s) is discovered and rectified immediately.
- 1.12.3 Wipe sampling will be carried out following procedures specified in the latest edition of the National Institute for Occupational Safety and Health (NIOSH) Method 9100 or the American Society for Testing of Materials (ASTM) Standard E1728-99. The samples will be analyzed by either the Flame Atomic Absorption Spectrophotometer technique as specified in NIOSH method 7082 or Graphite Furnace Atomic Absorption Spectrophotometer technique, NIOSH method 7105.
- 1.12.4 The clearance standards for settled lead dust inside a lead work area(s) is 40 µg/ft² (4 µg/100cm²) for floors, 250 µg/ft² (25 µg/100cm²) for interior window sills, and 400 µg/ft² (40 µg/100cm²) for window troughs.
- 1.12.5 In case the dust levels are equal to or greater than the specified clearance standards, the Contractor shall be responsible for re-cleaning the lead work area(s). This process will have to be repeated until the concentrations are below the specified limit.

1.13 Waste Transport and Disposal

- 1.13.1 All lead-containing and lead-contaminated materials shall be disposed of as prescribed by Ontario R.R.O 1990, Regulation 347/90 as amended, Waste Management Regulation, made under the Environmental Protection Act and the provincial and federal regulations for the Transportation of Dangerous Goods.
- 1.13.2 All wash water generated from decontamination activities shall be treated as lead waste and shall be disposed of accordingly.

- 1.13.3 All non-lead containing waste generated during demolition activities inside all lead work area(s) shall be treated as lead waste.
- 1.13.4 Non-porous materials that can be washed and properly cleaned can be disposed of as clean waste.
- 1.13.5 All sharp lead-contaminated materials (such as hangers, T-bars, wood, etc.) that could rip or damage a 6mil polyethylene waste disposal bag shall be disposed of in a sealed solid lead waste container.
- 1.13.6 The waste must be stored and transported in an enclosed, lockable waste bin.
- 1.13.7 Every vehicle used for the transportation of lead waste shall display a Class 9 Label.
- 1.13.8 Both sides of the vehicle used for the transportation of lead waste and every waste bag and container shall display the word CAUTION in letters not less than 10 cm in height and the words:
- CONTAINS LEAD WASTE**
Avoid Creating Dust
Lead May Be Harmful to Your Health
Wear Approved Protective Equipment
- 1.13.9 The transport vehicle must be properly equipped to deal with lead waste spills. Equipment shall include, but not limited to, respiratory protective equipment, disposable protective clothing, 6 mil polyethylene bags, shovel and broom and wetting agent.
- 1.13.10 The Contractor shall submit to the Consultant a copy of the shipping document and weight receipt for every shipment of lead waste.

PART 2 - FACILITIES AND PRODUCTS

2.1 **Equipment**

- 2.1.1 Provide equipment that is suitable for intended use as specified by the proper regulations and standards. All equipment used on the project shall be clean and in good state of repair.
- 2.1.2 Airless Sprayer: Equipment used for the application of amended water for dust suppression purposes.
- 2.1.3 Electrical Components and Equipment: supplied by the Contractor for performance of work on this project shall meet the requirements of the Canadian Standards Association (CSA) for use as installed.
- 2.1.4 Electrical Power Cords: Use single length power cords. If single length will not reach work area, use waterproof connectors to connect separate lengths. Use heavy duty cords in high traffic areas or in areas where abrasion of cords is expected. Only grounded electrical cords will be allowed.
- 2.1.5 Ground Fault Panel: use an electrical panel that is installed by a licensed electrician and is equipped with the following:
- 2.1.5.1 Ground fault circuit interrupts (breaker type) of sufficient capacity to supply all lights and equipment to be used in the work area.
- 2.1.5.2 Breakers shall have 5mA ground fault protection.
- 2.1.5.3 Main switch disconnect, test buttons and reset switches and circuit breaker lights.
- 2.1.5.4 Proper enclosure to prevent the penetration of moisture, dust and debris.
- 2.1.6 Temporary Lighting: Provide illumination as required in all work areas to perform the work safely and adequately. Illumination can be achieved by the use incandescent or fluorescent lamps. All lamps shall be protected by grounded guard cages or tempered glass enclosures.
- 2.1.7 Fine Atomizing Spray Nozzle: an airless sprayer nozzle that is designed to deliver no less than 1 gallon per minute of fine spray of water.
- 2.1.8 Flexible Ducting: Tubing used for the exhaust of negative air units. The tubing is made up of plastic with metal reinforcement and is of a diameter that is equal to the exhaust port of a negative air unit.
- 2.1.9 Garden Sprayer: a metal or plastic pressure-can hand pump equipped with a hose and a metal wand. The pump is used to spray a fine mist of liquid on surfaces in a work area.
- 2.1.10 HEPA Filtered Negative Air Unit: A portable air handling system which is used to create negative air pressure differential by the extracting the air directly from the work area and discharging it to the exterior of the area. The unit shall be equipped as follows: Fan, HEPA filter, pre-filters, pressure differential gauge, cabinet, high/low switch, on/off switch.
- 2.1.10.1 The fan shall have a capacity of 1500 cubic feet per minute. The fan shall be considered to have 80% of the rated air flow unless tested and certified by a company specializing in such measurements and subject to the approval of the Consultant.
- 2.1.10.2 Each unit shall have a HEPA filter installed as a final filter in the unit. A tight seal shall be established between the filter and the filter housing through the use of a rubber gasket. Each filter shall be clearly marked with the serial number, direction of air flow, efficiency, air flow rating, name of manufacturer and resistance.
- 2.1.10.3 Each unit shall have an on/off switched located on the exterior of the cabinet. The unit shall also be equipped with overload protection and components such as cabinet, fan, motor, etc. shall be grounded.
- 2.1.10.4 Each unit shall have a pressure differential gauge to monitor the filter loading and to indicate when the filters need to be changed. The unit shall also have a time meter to indicate the total accumulated hours of operation.

- 2.1.10.5 Each unit shall have the following warning and safety devices: a means for preventing the unit from operating without a HEPA filter; auto shutoff system to stop the fan in case of HEPA filter failure such as rupture of the filter or blockage of air flow through the filter.
- 2.1.10.6 Provide units with pre and intermediate filters installed at the intake of the unit and secured in place with clamps or special filter housings. Two pre-filters are required: the first pre-filter shall be of the low efficiency type and shall be 98% efficient for particles 100 microns and larger; the second pre-filter shall be of the medium efficiency type and shall be 95% efficient for particles down to 5 microns.
- 2.1.10.7 The cabinet of the unit shall be constructed of durable material able to withstand rough handling during removal work. The cabinet shall have wheels and shall be designed to allow access to the inside of the unit from the intake side for maintenance and replacement of filters. The unit shall be factory sealed to prevent the escape of dust and debris during transport and use.
- 2.1.11 HEPA Vacuum: A vacuum unit equipped with a HEPA filter and designed so that all discharged air passes through the filter. The unit shall be equipped with all attachments, tools and fittings to facilitate the performance of the work.
- 2.1.12 Pressure Differential Monitoring Unit: An instrument designed to measure the difference in pressure between the interior and exterior of a work area. As a minimum, the instrument shall consist of the following: a continuous recording wheel chart or tape; a gauge with a range from 0 to 0.1 inches water; sensor tubing and wall clamps; wall mounting devices, low limit and high limit audible alarm; and auto reset.
- 2.1.13 Power Washer: A piece of equipment capable of delivering an airless stream of liquid (water) at a pressure between 1200 and 2500 psi. Typically used for cleaning of work area surfaces and equipment and for wetting materials scheduled for removal before work start to reduce the creation of dust.
- 2.1.14 Scaffolding: Select, erect and use scaffolding in a manner that is in compliance with all applicable occupational health and safety regulations.
- 2.1.14.1 Types of scaffolding allowed consist of suspension or standing types such as cantilever, metal tube and coupler, pole or outrigger or tubular welded frame.
- 2.1.14.2 Provide non-skid surfaces and/or foot boards on all scaffolds where foot traffic is anticipated.
- 2.1.14.3 Provide an abrasive non-slip surfaces on rungs of metal ladders.
- 2.1.15 Water Service Components and Equipment: supplied by the Contractor for performance of work on this project shall be temperature and pressure rated for operation of the temperature and pressure encountered.
- 2.1.15.1 Hot water heater to be used for supplying water to the shower shall be:
- 2.1.15.1.1 ULC rated electric hot water heater.
- 2.1.15.1.2 Appropriately sized for the project.
- 2.1.15.1.3 Powered from the ground fault panel.
- 2.1.15.1.4 Equipped with a relief valve that is piped to a drip pan secured to the water heater.
- 2.1.15.2 Supply water to each working area and decontamination unit using pipes having a pressure rating greater than the pressure of the water distribution system. Provide fittings as necessary to allow connecting to existing systems and other temporary facilities.
- 2.1.15.3 The shower provided for the decontamination facility shall be of the walk through type. The shower pan shall be a waterproof, one piece pan constructed from stainless or galvanized steel with welded seams, copper or lead with soldered seams or fibreglass reinforced with wood. The shower head shall be adjustable for spray size and intensity. The shower shall be supplied with separate hot and cold water. The control for water temperature, flow and shut off shall be located inside the shower.
- 2.1.15.4 Multi-stage cascade filter units shall be provided on drain lines from any water source carrying lead-contaminated water from the work area including the shower. The units shall be provided with a

primary and a secondary disposal filter elements. The primary filter shall allow the passage of particles that are 20 microns and smaller. The secondary shall allow the passage of particles that are 5 microns and smaller. The units shall be connected so that the water passes the primary filter first and the discharge of the primary filter passes through the secondary filter.

2.2 Materials

- 2.2.1 Materials destined for use on this project shall be undamaged, shall comply with the requirements of the project and specifications and shall be unused at the time of installation unless otherwise indicated.
- 2.2.2 Lead Waste Container: An impermeable container that is dust-tight and impervious to lead waste. Shall be made of new material only and shall be labeled as required by applicable regulations with a pre-printed cautionary lead warning label. The container shall (depending on the nature of the waste material) be comprised of the following:
- 2.2.2.1 A 6 mil thick leak-tight polyethylene bag labeled as required and placed inside another 6 mil sealed polyethylene bag (in case the waste does not contain any sharp objects).
- 2.2.2.2 A 6 mil sealed polyethylene bag positioned inside or outside a heavy duty leak tight solid sealed container of sufficient strength to prevent perforation of the container during handling (in case the waste contains sharp objects).
- 2.2.3 Caulking: Acrylic polymer sealant that is non-staining.
- 2.2.4 Drop Sheets: Sheets made up of polyethylene of size and type appropriate to the work. To be placed under an area where work is being carried out.
- 2.2.5 Felts: 1/16" thick and 36" to 72" wide non-coated, standard cellulose building felt.
- 2.2.6 Rip-Proof (Fibre Re-enforced) Polyethylene Sheeting: 8 mil fibre re-enforced fabric (bonded on both sides with polyethylene sheeting) made up from 5 mil weave and 2 layers of 1.5 mil poly laminate. Provide new material only in maximum size sheets (to fit work) to minimize joints.
- 2.2.7 Fire Extinguisher: Provide type "ABC" dry chemical fire extinguishers of a combination of extinguishers suitable for the type of exposure in each case.
- 2.2.8 First Aid Supplies: Provide and maintain first aid supplies on the project site as required by applicable regulations and construction industry recommendations.
- 2.2.9 Flame Resistant Polyethylene Sheeting: a layer of polyethylene sheeting that conforms to the requirements of the NFPA Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide new material only in 6 mil thickness and in maximum size sheets (to fit work) to minimize joints.
- 2.2.10 Foam: Polyurethane expanding foam of low density.
- 2.2.11 Polyethylene Sheeting: A 6 mil minimum (unless otherwise specified) thickness polyethylene film in maximum sheet size to minimize seems and black, frosted or clear as required to meet specifications.
- 2.2.12 Protective Coveralls: Full body coveralls complete with hoods and shoe coverings, made up of a material which does not permit penetration of lead dust, fume or mist and is disposable.
- 2.2.13 Spray Cement: Specifically formulated spray adhesive in spray cans devised to stick to polyethylene sheets.
- 2.2.14 Tape: 2" to 3" widths reinforced tape (cloth or fibreglass reinforced) appropriate for sealing polyethylene sheets under dry and wet conditions.
- 2.2.15 Wetting Agent: A mixture of water and a surfactant used for wetting lead-containing materials before removal to minimize the release of fibres during disturbance of the material.

2.3 Platforms

- 2.3.1 Work in certain areas of the project will require the use of platforms. Unless otherwise specified, work platforms for this project shall be erected as follows:
- 2.3.1.1 Set up a support structure of metal, wood or equivalent scaffolding above which the work platform will be positioned.
- 2.3.1.1.1 Place one layer of rip proof polyethylene sheeting over scaffold board.
- 2.3.1.1.2 Place one layer of plywood sheets over the rip proof poly and fasten in place using nails.
- 2.3.1.1.3 Ensure that the plywood is of sufficient thickness and is capable of supporting the weight of all personnel and equipment expected to be present on the platform. Comply with the requirements of applicable Occupational Health and Safety Acts and Regulations.
- 2.3.1.1.4 Prevent water leakage from the platform by taping and caulking the seams between the plywood sheets and by instating a minimum of two layers of rip proof poly over the plywood sheets.
- 2.3.1.1.5 Isolate the platform from the occupied areas through the use of plywood walls.
- 2.3.1.2 The bases of the support structure shall be adequately sized and rated to protect the floors. The Contractor shall be responsible for rectifying any damages caused by the support structure and the platform.
- 2.3.1.3 Ensure that the support structure is set up in a manner that will not interfere with activities that are regularly carried out in the space.
- 2.3.1.4 Ensure that the existing lighting levels are maintained under the platform by using temporary fluorescent light fixtures.
- 2.3.1.5 Install air tight and water tight escape hatches for every 500 square feet of platform. The hatches shall be designed to allow for quick egress from the work area in case of an emergency and shall be supplied with emergency lighting.

2.4 Decontamination Enclosure Systems

- 2.4.1 Decontamination enclosure systems shall be constructed before any other work commences. The decontamination systems shall include one system for workers decontamination and another system for equipment and waste decontamination.
- 2.4.2 Enclosure System for Worker Decontamination: This enclosure system shall consist of a clean room, a shower room and an equipment and access room.
- 2.4.2.1 Clean Room: A clean room shall be constructed between the clean occupied areas and the shower room. The clean room shall have:
- 2.4.2.1.1 A storage space for clean personal protective equipment.
- 2.4.2.1.2 Hangers, hooks and secures lockers for workers use and for safe storage of personal belongings.
- 2.4.2.1.3 A mirror to aid workers in fittings respiratory equipment before entry into the contaminated areas.
- 2.4.2.1.4 Airlocks on the shower side and the clean occupied area side.
- 2.4.2.1.5 A lockable wood door on the occupied area side to prevent unauthorized entry into the work areas.
- 2.4.2.1.6 An area of 100 square feet (minimum) or shall be based on a criteria of 10 square feet per worker, whichever is greater.
- 2.4.2.2 Shower Room: A shower room shall be constructed between the clean room and the equipment and access room. The shower room shall have:
- 2.4.2.2.1 A shower unit of the walk through type for every 8 workers.
- 2.4.2.2.2 Airlocks on the clean room side and the equipment and access room side.

- 2.4.2.2.3 Clean towels, soap and shampoo supplied by the Contractor for use by the workers.
- 2.4.2.2.4 A constant supply of hot and cold running water with individual controls within the shower units to regulate water temperature and flow rate.
- 2.4.2.2.5 Individual hot and cold shut-off valves with access from the clean room of the decontamination enclosure.
- 2.4.2.2.6 Containers for disposing of used respirator filters and hooks for hanging respirators located on the clean side of the shower.
- 2.4.2.2.7 Watertight piping and sealed drip pans.
- 2.4.2.2.8 Sump pumps for removing shower waste water. Pump the waste water through the filter systems specified before discharging into sanitary sewer drains.
- 2.4.2.2.9 Power switches and outlets that are ground fault protected. Sump pumps power switches shall be located on both sides of the shower unit.
- 2.4.2.3 Equipment and Access Room: An equipment and access room shall be constructed between the shower room and the contaminated work areas. The equipment and access room shall have:
- 2.4.2.3.1 Airlocks on the shower side and the contaminated area side.
- 2.4.2.3.2 An area of not less than 100 square feet to allow one worker enough space to undress comfortably.
- 2.4.2.3.3 Facilities for storing personal protective equipment and clothing which will be used again inside the contaminated areas.
- 2.4.3 Enclosure System for Equipment and Waste Decontamination: This enclosure system shall consist of a transfer room, a holding room and a cleaning room.
- 2.4.3.1 Transfer Room: A transfer room shall be constructed between the clean occupied areas and the holding room. The room shall have a lockable wood door on the occupied area side to prevent unauthorized entry into the work areas. It shall have airlocks on the clean occupied area side and the holding room side. The size of the transfer room should be large enough to facilitate double bagging of waste bags or to house the largest piece of equipment used.
- 2.4.3.2 Holding Room: A holding room shall be constructed between the transfer room and cleaning room. The room shall have airlocks on the transfer room side and the cleaning room side. The size of the transfer room should be large enough to facilitate double bagging of waste bags or to house the largest piece of equipment used inside the lead work area(s).
- 2.4.3.3 Cleaning Room: A cleaning room shall be constructed between the holding room and the contaminated area. The room shall have airlocks on the holding room side and the contaminated area side. The size of the cleaning room should be large enough to facilitate washing and cleaning of waste bags, containers and equipment and for double bagging of waste bags.
- 2.4.3.4 This enclosure system shall not be used by workers exiting the contaminated area as a replacement for the workers decontamination enclosure system.
- 2.4.4 Construction of Decontamination Enclosure Systems: Enclosures shall be constructed using suitable framing to fit the area. Alternatively, exiting rooms can be used subject to the approval of the Consultant.
- 2.4.4.1 Use 2"x4" studs at 16" o/c to the construct the walls and ceilings frames. The interior side of the frame shall be covered by one layer of rip proof polyethylene sheeting.
- 2.4.4.2 Cover the exterior side of the frame located inside the contaminated area with plywood sheets. All plywood sheets joints shall be sealed with duct tape. Cover the plywood sheets with two independently sealed layers of rip proof polyethylene sheeting. Cover the exterior side of the frame which is not located inside the contaminated area or in an occupied area with 1 layer of rip proof polyethylene sheets. The exterior side of the frame located in an occupied area shall be covered with painted drywall sheets installed over one layer of rip proof polyethylene sheeting.

- 2.4.4.3 The floor of the decontamination enclosure system shall be protected with two independently sealed layers of rip proof poly sheets. The poly sheets used on the floor shall overlap with the poly sheets installed on the walls.
- 2.4.4.4 Separate the various rooms of the decontamination enclosure systems by curtained doorways constructed using two flap doors which are of the same dimensions as the openings. The flaps shall be made up of two layers of rip proof polyethylene sheets. Fasten the two sheets together and reinforce all edges with duct tape. The top and one side of each flap shall be secured to the enclosure frame. Attach a weight to the bottom of each of the flaps. Mark the opening between the two flaps using pieces of duct tape configured in the shape of a directional arrow.

PART 3 - EXECUTION

3.1 ***Type 1 Removal Operations***

3.1.1 Initial Preparation and Isolation of Work Area(s): Unless otherwise specified, work carried out as part of this phase shall proceed as follows:

3.1.1.1 Carry out a survey of the work area(s) to compile an inventory of existing damages and provide a copy to the Consultant.

3.1.1.2 The Contractor is responsible for moving materials and objects which are present in the work area(s).

3.1.1.3 Prevent the spread of dust from the work area using measures appropriate to the work to be done.

3.1.1.3.1 Shut off, lock out and seal all ventilation duct vents with the application of one layer of 6 mil (0.15mm) thick clear polyethylene sheet sealed with tape.

3.1.1.3.2 Use FR polyethylene drop sheets over all flooring in work area(s) where dust, chips, or debris may be produced and where contamination cannot otherwise be thoroughly cleaned.

3.1.1.3.3 Separate parts of the building required to remain in use from the work area(s) by polyethylene drop sheets at the perimeter of the work area(s).

3.1.1.3.4 Separate the work area(s) with clearly visible warning signs advising of the hazards of lead dust and that entry is restricted to authorized trained personnel wearing personal protective equipment.

3.1.1.3.5 Erect scaffolding or platforms where necessary to perform the removal work. All platforms that exceed 25 feet in height will require the submission of a shop drawing stamped by a professional engineer for approval by the inspector within a minimum of 5 days prior to commencing the work. Guard rails shall be provided around all platforms or scaffolding where practicable. Cover the floor area of the scaffold or platform with one layer of FR polyethylene. Extend the floor of scaffolding or platform under an item being removed to act as a receptacle. Polyethylene sheeting shall be suitably braced and/or restrained so that billowing or failure of the polyethylene sheeting or taped joints does not occur.

3.1.2 Entry and Exit Procedures from Lead Removal Work Area(s): the following general procedures shall be adhered to when entering into and exiting from lead abatement work area(s):

3.1.2.1 Work Area(s) Entry Procedures:

3.1.2.1.1 Every worker and visitor planning to enter the work area should remove all street clothing and should store them in a designated clean change room.

3.1.2.1.2 The person shall then put on disposal coverall with head covering, respirators with clean filters and foot covering and shall proceed to the work area(s).

3.1.2.2 Work Area(s) Exit Procedures:

3.1.2.2.1 Each worker shall decontaminate their protective clothing, boots and respirator by first HEPA vacuuming and then by damp wiping using soap and water.

3.1.2.2.2 The removed disposable coveralls shall be disposed of as lead waste in a 0.15 mm (6 mil) labeled waste bag. Respirator filter inlets shall be sealed in tape or disposed of as lead waste.

3.1.3 **Lead Removal Procedures**

3.1.3.1 Lead removal shall not commence until:

3.1.3.1.1 The work area is effectively separated from clean areas of the building.

3.1.3.1.2 Warning signs are posted outside the removal work area(s).

3.1.3.1.3 All surfaces which are not possible to clean are sealed with polyethylene sheeting and tape.

- 3.1.3.1.4 Arrangements have been made for waste disposal, landfill site operator has been contacted and storage bin is on site.
- 3.1.3.1.5 Tools equipment and materials are on hand and in the work area(s).
- 3.1.3.1.6 Facilities for the washing of hands and face are available for workers leaving the work area(s).
- 3.1.3.2 Before beginning work remove visible dust from surfaces in the work area where dust is likely to be disturbed during the course of the work. Use HEPA vacuums, or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate. Do not use compressed air or dry sweeping to clean up or remove dust from any surface.
- 3.1.3.3 Wet materials containing lead to be cut, ground, abraded, drilled, or otherwise disturbed with amended water. Use garden type low velocity fine mist sprayer. Perform work in a manner to reduce dust creation to lowest levels practicable. Spray lead material repeatedly during the work process to minimize airborne lead dust.
- 3.1.4 Final Clean
- 3.1.4.1 When removal is complete, clean the entire work area by HEPA vacuuming and wet wiping.
- 3.1.4.2 The work area(s) shall be deemed clean by the Inspector when there is no visible residue, dust, dirt, film, stain, or discolouration resulting from either lead removal or cleaning activities.
- 3.1.4.3 After completion of the initial cleaning and after the Inspector has passed the visual inspection, spray sealant on all surfaces in the work area(s), including, but not limited to:
 - 3.1.4.3.1 Where lead material has been removed.
 - 3.1.4.3.2 Polyethylene sheeting used on walls, floors and ceilings.
- 3.1.4.4 Sealant should be sprayed using a garden reservoir type low velocity fine mist sprayer. The sprayer cannot be used if the nozzle is partially obstructed, or if a uniform fine mist spray cannot be obtained.
- 3.1.4.5 After the work area(s) is declared clean and written approval to proceed has been received from the Inspector:
 - 3.1.4.5.1 Dismantle boundaries and isolating barriers as lead waste. Drop sheets shall be wetted and folded to contain dust and then placed in waste bags.
 - 3.1.4.5.2 Immediately before their removal from the work area(s), and disposal, clean each filled labeled waste bag using damp cloths or HEPA vacuum and place in second clean clear polyethylene waste bag.
 - 3.1.4.5.3 Dispose of waste as per procedures specified in subsection 1.16 Waste Transport and Disposal.
- 3.1.4.6 Repair or replace objects damaged in the course of the work. Re-establish objects moved to temporary locations in the course of the work, in their proper positions. Re-secure mounted objects removed in the course of the work in their former positions.
- 3.2 *Type 2a and 2b Removal Operations***
- 3.2.1 Initial Preparation and Isolation of Work Area(s): Unless otherwise specified, work carried out as part of this phase shall proceed as follows:
 - 3.2.1.1 Carry out a survey of the work area(s) to compile an inventory of existing damages and provide a copy to the Consultant.
 - 3.2.1.2 The Contractor is responsible for moving materials which are present in the work area(s).
 - 3.2.1.3 Prevent the spread of dust from the work area(s) using measures appropriate to the work to be done.
 - 3.2.1.3.1 Shut off, lock out and seal all ventilation duct vents with the application of one layer of 6 mil (0.15 mm) thick clear polyethylene sheet sealed with tape.
 - 3.2.1.3.2 Clean all moveable objects within proposed work area using a HEPA vacuum.

- 3.2.1.3.3 Clean fixed casework and equipment within proposed work area, using a HEPA vacuum and cover with polyethylene sheeting sealed with tape.
- 3.2.1.3.4 Clean proposed work areas using, where practicable, HEPA vacuum cleaning equipment. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA filter-equipped vacuums.
- 3.2.1.3.5 Cover and seal airtight light fixtures, duct openings and other suspended ceiling objects using clear 6 mil polyethylene sheeting and tape.
- 3.2.1.3.6 Erect scaffolding or platforms necessary to perform the removal work. All platforms that exceed 25 feet in height will require the submission of a shop drawing stamped by a professional engineer for approval by the inspector within a minimum of 5 days prior to commencing the work. Guard rails shall be provided around all platforms or scaffolding where practicable.
- 3.2.1.3.6.1 Cover floor area of scaffold or platform with one layer of FR polyethylene.
- 3.2.1.3.6.2 Extend scaffolding or platform under the item being removed to prevent material from falling.
- 3.2.1.3.7 Separate parts of the building required to remain in use from the work area by polyethylene drop sheets at the perimeter of the work area.
- 3.2.1.3.8 Set up an airtight enclosure around the work area where the work on lead-containing material is to be carried out. Enclosure should be set up using 1 layer of FR polyethylene sheeting to cover the floors, and 1 layer of 6 mil (0.15 mm) thick clear polyethylene sheeting to cover the walls. Two layers of FR polyethylene sheeting should be used to cover carpeted floors. Polyethylene on the walls should be made to overlap with the polyethylene on the floor a minimum of 300 mm.
- 3.2.1.3.9 Polyethylene sheeting shall be suitably braced and/or restrained so that excessive billowing or failure of the polyethylene sheeting or taped joints does not occur as a result of the negative pressure differential created by the vacuums.
- 3.2.1.3.10 Erect a temporary structure made of wooden studs to support polyethylene sheeting where necessary.
- 3.2.1.3.11 Insert a hose of a HEPA filter equipped vacuum into the enclosure to provide negative air pressure inside the enclosure.
- 3.2.1.3.12 Entrance to the enclosure should be covered with two pieces of overlapping polyethylene sheeting.
- 3.2.1.3.13 The Contractor shall separate the work area(s) and place warning signs at all access points leading to the contained work area. The signs shall be posted at the curtained doorways and shall read:

CAUTION
LEAD DUST, FUME, or MIST HAZARD AREA
NO UNAUTHORIZED ENTRY
WEAR ASSIGNED PROTECTIVE EQUIPMENT
BREATHING LEAD DUST MAY CAUSE SERIOUS BODILY HARM

- 3.2.2 Entry and Exit Procedures from Lead Removal Work Area(s): the following general procedures shall be adhered to when entering into and exiting from lead abatement work area(s):
 - 3.2.2.1 Work Area(s) Entry Procedures:
 - 3.2.2.1.1 Every worker and visitor planning to enter the work area(s) should remove all street clothing and should store them in a designated clean change room.
 - 3.2.2.1.2 The person shall then put on disposable coveralls with head covering, respirators with clean filters and foot covering and shall proceed to the work area through the flaps covering the entrance to the enclosure.
 - 3.2.2.2 Work Area(s) Exit Procedures:

- 3.2.2.2.1 Each worker shall decontaminate their protective clothing, boots and respirator by first HEPA vacuuming and then by damp wiping using soap and water.
- 3.2.2.2.2 The removed disposable coveralls shall be disposed of as lead waste in a 0.15 mm (6 mil) labeled waste bag. Respirator filter inlets shall be sealed in tape or disposed of as lead waste.
- 3.2.3 Lead Removal Procedures
- 3.2.3.1 Lead removal shall not commence until:
- 3.2.3.1.1 The work area(s) is effectively separated from clean areas of the building.
- 3.2.3.1.2 Warning signs are posted outside the removal work area(s).
- 3.2.3.1.3 All surfaces which are not possible to clean are sealed with polyethylene sheeting and tape.
- 3.2.3.1.4 Arrangements have been made for waste disposal, landfill site operator has been contacted and storage bin is on site.
- 3.2.3.1.5 Tools, equipment and materials are on hand and in the work area(s).
- 3.2.3.1.6 Facilities for the washing of hands and face are available for workers leaving the work area(s).
- 3.2.3.2 Before beginning the work, remove visible dust from the surfaces in the work area(s). Use HEPA vacuums, or damp cloths where damp cleaning is considered more appropriate. Do not use compressed air or dry sweeping to clean up or remove dust from any surface.
- 3.2.3.3 Wet materials containing lead to be removed, disturbed, or sealed with amended water. Garden reservoir type low velocity fine mist sprayer may be used. Perform work in a manner to reduce dust creation to lowest levels practicable. Spray lead material repeatedly during the work process to minimize airborne lead dust.
- 3.2.3.4 Removed material has to be placed directly in waste bags. Wherever possible, lead-containing material should be removed in sections as intact as possible.
- 3.2.3.5 Areas that used to be covered with the lead-containing material should be cleaned after the material is removed, using brushes, steel wool, or any other tools suitable.
- 3.2.3.6 Frequently during the work and immediately after completion of the work, clean up dust and waste containing lead using a HEPA vacuum or by damp wiping.
- 3.2.3.7 All labeled waste bags should be placed in clean clear 6 mil poly bags before they are taken out of the enclosure.
- 3.2.4 Final Clean
- 3.2.4.1 When removal is complete, clean the entire work area by HEPA vacuuming and wet wiping.
- 3.2.4.2 All tools and equipment used in the removal process such as knives, extension cords, scrapers, wire brushes, garden sprayers etc., should be washed and cleaned and placed in 6 mil polyethylene bags.
- 3.2.4.3 The work area(s) shall be deemed clean by the Inspector when there is no visible residue, dust, dirt, film, stain, or discoloration resulting from either lead removal or cleaning activities.
- 3.2.4.4 The enclosure should be left standing until wipe sample(s) are taken inside the enclosure, and the lead concentration level is below 40 µg/ft² for floors and/or 250 µg/ft² for window sills, and/or 400 µg/ft² for window sills.
- 3.2.4.5 After the area(s) is declared clean and written approval to proceed has been received from the Inspector:
- 3.2.4.5.1 Dismantle boundaries and isolating barriers and treat as lead waste. Drop sheets shall be wetted and folded to contain dust and then placed in waste bags.
- 3.2.4.5.2 Immediately before their removal from the work area(s), and disposal, clean each filled labeled waste bag using damp cloths or HEPA vacuum and place in second clean clear polyethylene waste bag.
- 3.2.4.5.3 Dispose of waste as per procedures specified in subsection 1.16 Waste Transport and Disposal.

3.2.4.6 Repair or replace objects damaged in the course of the work. Re-establish objects moved to temporary locations in the course of the work, in their proper positions. Re-secure mounted objects removed in the course of the work in their former positions.

3.3 Type 3a and 3b Removal Operations

3.3.1 Initial Preparation and Isolation of Work Area(s): Unless otherwise specified, work carried out as part of this phase shall proceed as follows:

3.3.1.1 Carry out a survey of the work area(s) to compile an inventory of existing damages and provide a copy to the Consultant.

3.3.1.2 The Contractor is responsible for moving materials and objects which are present in the work area(s).

3.3.1.3 Separate the lead removal work area(s) from other areas in the building required to remain in use by erecting floor to ceiling rip-proof polyethylene sheeting supported on wood framing.

3.3.1.4 All surfaces, equipment and objects located in the work areas and not scheduled for removal shall be pre-cleaned by HEPA vacuuming or wet wiping and shall be protected by one layer of rip proof poly sheeting unless otherwise specified. Dry sweeping or vacuuming with units not equipped with HEPA filters shall not be allowed.

3.3.1.5 All equipment, objects and articles scheduled for removal shall be taken out of the work area(s) only if its removal will not disturb any lead-containing materials.

3.3.1.6 Ensure that smoke detectors, fire alarms, heat detectors and other life safety equipment remain active and operating as installed.

3.3.1.7 All specified clean demolition work can be carried out before the Type 3 enclosure is set up on condition that the demolition work does not disturb any lead-containing materials.

3.3.1.8 Construct the decontamination enclosure systems for workers and for equipment and materials as specified.

3.3.1.9 Independently seal off all openings leading to the work area(s) using polyethylene sheeting and duct tape. Such openings include, but are not limited to, windows, doorways, corridors, skylights, diffusers, grills and air ducts. Also seal all floor openings independently before covering the entire floor with polyethylene sheeting. Ensure that the individual seals are air tight and water tight.

3.3.1.10 Cover floors with two independently sealed layers of polyethylene sheeting and seal with duct tape. The first layer immediately above the floor shall be 6 mil poly. The other layer shall be rip proof poly. Poly on the floor shall extend a minimum of 30 cm up all vertical surfaces located in the work area.

3.3.1.11 Cover walls with two independently sealed layers of 6 mil clear polyethylene sheeting. Overlap floor poly with wall poly by a minimum of 30 cm at each layer. The layers of wall poly shall always overlap the layers of the floor poly.

3.3.1.12 Ensure that adjoining sheets of poly used on walls and floors overlap by at least 30 cm.

3.3.1.13 Ensure that poly sheets are properly supported to avoid excessive billowing and failure of the enclosure as a result of applying negative pressure differential. Brace the poly in case of excessive billowing using 1"x2" straps or any other measures and means as required.

3.3.1.14 Use flame resistant polyethylene sheeting near heat sources.

3.3.1.15 Create negative pressure in the work area using HEPA-filtered negative air unit distributed evenly (horizontally and vertically) within the work area. Supply any necessary platforms as required to elevate the negative air unit.

3.3.1.16 Provide enough negative air units to be able to exchange the air volume of the work area at least once every 20 minutes (three air changes per hour) and to maintain a minimum of 0.03" water gauge differential.

- 3.3.1.17 The pressure differential shall be continuously monitored using an automatic recorder as specified. Place the monitor outside the contaminated work area. A backup negative air unit shall be set up and ready for operation in case one of the original units fail.
- 3.3.1.18 Operate the negative air units from the start of the preparation and isolation phase until completion of the final cleanup work and air testing.
- 3.3.1.19 Ensure that the necessary make up air is supplied to the work area through flaps installed in the perimeter seal.
- 3.3.1.20 Replace pre-filters and HEPA filters as necessary to maintain the proper flow rate and to ensure that the unit continues to function properly.
- 3.3.1.21 Contaminated air from the work area shall be exhausted directly to the outside through sealed ducts. Where necessary, remove existing windows and replace with a plywood panel. Secure the panel in place and make weather tight using caulking. Install appropriately sized openings for exhaust (typically 12"). Replace windows upon completion of work.
- 3.3.1.22 All negative air units which are set up to discharge inside the building shall be leak tested in place using the DOP method.
- 3.3.1.23 The Contractor is allowed to connect to the owner's existing water supply for use in the lead work areas and in the temporary shower and decontamination facilities. The Contractor shall be responsible for making all the connections using vacuum breakers and other backflow preventers.
- 3.3.1.24 The Contractor shall use copper pipes and fittings and high pressure hoses when making connections to the main water supply. The Contractor shall also install a main shut-off valve on the clean side of the decontamination enclosure. All connections shall be made downstream from the main shut-off valve. Ensure that the pressure in the temporary water distribution system is relieved if the system is to be left unattended. Ensure that no leaks are present around hose pipe connections. Minimize the possibility of water damage through spills or leaks by providing drip pans of suitable size and by ensuring that the drip pans are drained regularly.
- 3.3.1.25 Ensure that all water from the drainage facilities installed on the shower and other decontamination enclosures is passed through filtration systems as specified.
- 3.3.1.26 Test all temporary piping installed during this project and ensure that they are watertight. All temporary pipe installation shall remain water tight for the duration of the project. Pipes shall be installed parallel to walls and shall be temporarily secured to existing structures. Ensure that all piping is removed upon completion of work. Avoid damaging or altering the owner's existing water equipment and piping.
- 3.3.1.27 All electrical work shall be performed by a licensed electrician in compliance with all applicable regulations. Isolate, disconnect and lockout all power supplying or passing through the work area. Ensure that power supply to the remaining areas of the building is not disrupted during work in lead contaminated areas.
- 3.3.1.28 Unless specified, the use of the existing power and lighting circuits shall not be allowed. Use temporary electrical panels to provide power and lighting to the decontamination facilities and the work area. One electrical panel shall be provided for every 5000 square feet of contained lead work areas. Electrical panels shall be equipped and sized to handle all electrical equipment required for the completion of the project. The Contractor shall also be required to provide other additional electrical equipment such as temporary lighting, circuit breakers, panels, transformers and switch gears.
- 3.3.1.29 The contractor shall be responsible for establishing and maintaining fire and emergency exits from the work area that are acceptable to the Provincial Fire Marshall and other authorities having jurisdiction. The emergency exits shall be sealed in a manner that will not hinder the use of the doors during an evacuation and shall be clearly marked by using proper exit signs.

- 3.3.1.30 Battery powered emergency lighting shall be installed by the Contractor to provide general lighting throughout the work area(s) in case of loss of power supply to the ground fault panel and to ensure that the emergency exits and the exit routes remain lit during the power failure.
- 3.3.1.31 Ensure that fire extinguishers are installed throughout the lead work area(s) at each of the emergency exits and on both sides of the decontamination facilities. All fire extinguishers installed inside the work area(s) shall be protected by clear polyethylene sheets and shall be easily accessible in case of an emergency.
- 3.3.1.32 The Contractor shall place warning signs at all access points leading to the contained work area(s). The signs shall be posted at the curtained doorways and shall read:
- CAUTION
LEAD DUST, FUME, or MIST HAZARD AREA
NO UNAUTHORIZED ENTRY
WEAR ASSIGNED PROTECTIVE EQUIPMENT
BREATHING LEAD DUST MAY CAUSE SERIOUS BODILY HARM
- 3.3.1.33 Once the initial clean preparation and isolation of the work area(s) is completed, the Contractor shall request an inspection from the Consultant before proceeding to next phase. Notify the Consultant 24 hours before the inspection is needed.
- 3.3.1.34 Once authorization is obtained from the Consultant, proceed to setting up critical seals that become accessible once removal operations commence.
- 3.3.1.35 Shut off and lock out the HVAC system serving the subject work area. Ensure that all work requiring the complete shutdown of the HVAC system is carried out during the time when the building is not occupied.
- 3.3.1.36 Unless otherwise specified, all electrical systems scheduled to remain inside the work area(s) during lead removal activities shall be sealed using duct tape and poly sheets. Examples of such systems include speakers, wiring, smoke and heat detectors, alarm equipment, communication systems, PA systems, junction boxes, etc.
- 3.3.1.37 Once all the preparation work is complete, the contractor shall ensure that the work area(s) is maintained neat and organized. All the enclosures shall be inspected by the supervisor before and after the completion of each work shift to ensure that the hoarding walls, polyethylene barriers and enclosures are intact. Any damaged discovered during the inspection shall be repaired immediately. Maintain an inspection log book on site to document when (date and time) the inspection was carried out and by whom (name and signature of the person). Summarize any problems encountered during the inspection.
- 3.3.1.38 Ensure that the negative air units and the associated ducting and exhaust openings are regularly inspected during the work shift. The pressure differential monitoring unit shall be also inspected regularly during the work shift to ensure that the specified negative pressure inside the work area(s) is maintained.
- 3.3.2 Entry and Exit Procedures from Lead Removal Work Area(s): the following general procedures shall be adhered to when entering into and exiting from lead abatement work area(s):
- 3.3.2.1 Work Area(s) Entry Procedures:
- 3.3.2.1.1 Every worker and visitor planning to enter the work area(s) shall remove all street clothing including undergarments and shall store them in the clean change room.
- 3.3.2.1.2 All uncontaminated articles such as clothing, footwear, towels, personal effects, etc. shall be store in the clean room of the decontamination facility.
- 3.3.2.1.3 The person shall then put on disposal coverall with head covering, respirators with clean filters and foot covering and shall proceed to the work areas through the shower and then the equipment and access room.

3.3.2.2 Work Area(s) Exit Procedures:

- 3.3.2.2.1 Using HEPA vacuuming or wet wiping, remove all gross contamination from personal protective equipment (disposable coveralls, boots, hard hats, safety glasses, exterior of respirator, etc.) in the work area(s) and then proceed to the equipment and access room.
- 3.3.2.2.2 In the equipment and access room, remove all protective clothing except the respirator and proceed to the shower. All disposal contaminated clothing shall be placed in lead disposal bags. Reusable items shall be stored neatly in the equipment and access room for use during the next shift.
- 3.3.2.2.3 Proceed naked to the shower while still wearing the respirator. While showering, clean the outside of the respirator with soap and water. Seal the openings in the filter as per the manufacturer's instruction or using duct tape. Alternatively, the filters can be disposed of as lead waste. Continue showering by thoroughly wetting and washing the body and the head. Wet and clean the inside of the respirator. Filters shall not be allowed in the clean room if not properly sealed.
- 3.3.2.2.4 Upon completion of showering and drying off, proceed to the clean room and dress in street clothing.

3.3.3 Lead Removal Procedures

- 3.3.3.1 Lead removal work shall not commence until the following requirements have been met:
 - 3.3.3.2 The work area(s) have been and contained as specified, decontamination enclosure systems have been set up and occupied areas of the building have been properly isolated.
 - 3.3.3.2.1 All required notifications have been made.
 - 3.3.3.2.2 Warnings signs have been displayed at all potential access points into the work area(s).
 - 3.3.3.2.3 All arrangements have been made with the waste disposal facility.
 - 3.3.3.2.4 All equipment, materials and tools needed inside the work area(s) are available and in working condition.
 - 3.3.3.2.5 Appropriate negative pressure differential have been established inside the work area(s) with proper allowance for makeup air.
 - 3.3.3.2.6 All building security arrangements have been made.
 - 3.3.3.2.7 Written authorization has been obtained from the Consultant to commence lead removal work.
 - 3.3.3.3 Using an airless sprayer, spray the lead-containing material with water mixed with a wetting agent. Apply enough amended water to ensure that the material is wet.
 - 3.3.3.4 Remove the wet lead-containing materials in layers and/or small sections. Spray the material regularly throughout the removal work to maintain saturation and to minimize the generation and dispersion of dust. Ensure that the wet material does not dry out.
 - 3.3.3.5 Ensure that the removed material and other waste generated during the removal process is collected and bagged immediately. Place the material in 6 mil bags. Ensure that the waste water is also collected regularly. Avoid pooling of water. Dispose of the waste water in labeled 6 mil polyethylene bags (or other suitable rigid containers) or pump it straight into the sanitary sewer after passing it through proper filters. Refer to Section 3.3.4 for specific procedures for handling of materials and waste.
 - 3.3.3.6 Mist the air during the removal process using an airless sprayer capable of producing a fine mist and amended water to keep the airborne dust levels as low as possible. Monitor the air inside and outside of the work area during removal.
 - 3.3.3.7 Remove deck mounted objects and other obstructions as necessary to facilitate the removal of the lead-containing materials. Ensure that the removal work includes all lead-contaminated materials specified for removal.

3.3.4 Final Clean

- 3.3.4.1 After completion of gross lead removal work, perform a more thorough cleaning of all surfaces that used to be covered by lead to remove all visible residue and dust-containing materials. Cleaning shall be carried out using wire brushing, wet sponging, wet sweeping and/or wet shovelling and HEPA vacuuming. Ensure that the surfaces remain wet during the performance of this work.
- 3.3.4.2 All tools and equipment used in the removal process such as hook knives, extension cords, scrapers, wire brushes, garden sprayers etc., should be washed and cleaned and placed in 6 mil polyethylene bags.
- 3.3.4.3 Notify the Consultant in cases where leads-containing materials is encountered which cannot be properly removed without demolishing building structural members or removing major service elements. The Consultant will advise the Contractor in writing regarding the next course of action.
- 3.3.4.4 Continue with the wet thorough cleaning activities and include other surfaces in the work area(s) including, but not limited to, decontamination facilities, polyethylene sheeting, walls and floor surfaces, equipment, containers, piping, ducts, conduits and poly surfaces used in the equipment and access room and the equipment decontamination facilities. Pre-filters used on the negative air units shall be removed and shall be disposed of as lead waste.
- 3.3.4.5 The work area(s) shall be deemed clean by the Consultant when there is no visible residue, dust, dirt, film, stain, or discolouration resulting from either lead removal or cleaning activities.
- 3.3.4.6 The work area(s) shall be considered acceptable for public occupancy only if the lead concentrations inside the work area are below 40 µg/ft² for floors and/or 250 µg/ft² for window sills, and/or 400 µg/ft² for window sills. Levels above the clearance standards require that the entire area be re-cleaned and another coat of lock-down agent be applied by the Contractor on all surfaces in the work area. Re-sampling will be carried out and the entire process shall be repeated until the dust levels are below the clearance standards.
- 3.3.4.7 The Contractor shall be responsible for all charges associated with re-cleaning work and other associated requirements as specified.

3.3.5 Procedures for Work Area Teardown and Dismantling

- 3.3.5.1 Proceed with the teardown of the work area(s) only after obtaining written authorization from the Consultant. Ensure that Type 3 procedures remain in effect during this phase of work. The worker and equipment and material decontamination units shall remain fully operational. The negative air units shall continue to operate throughout the duration of the teardown work.
- 3.3.5.2 Start by removing polyethylene sheeting by carefully folding it away from the walls to the centre of the work area making sure that any loose debris is trapped within the poly. Also remove all enclosures, duct tape, caulking, polyurethane foam and other materials used in setting up the enclosure. Polyethylene and other materials used in setting up enclosures shall be disposed of as lead-contaminated waste.
- 3.3.5.3 Clean all vacuum units, fittings, hoses and other small tools used during the removal work inside the work area(s), seal in 6 mil poly bags and remove from the work area through the equipment and materials decontamination unit. Wash down and clean other equipment used during the work and remove from the work area(s).
- 3.3.5.4 Clean up the lead work area including all surfaces and all decontamination enclosures. Remove negative air units pre-filters and dispose of as lead waste. Seal the exterior of the unit on all sides with poly and remove from the work area(s).
- 3.3.5.5 Remove all waste bags containing polyethylene sheets and other materials used to set up the enclosures and dispose of as specified.
- 3.3.5.6 Remove all hoarding walls separating the work area(s) from occupied areas except in locations where the walls are set up adjacent to other areas that still contain lead. Obtain approval of Consultant before dismantling hoarding walls.

3.3.5.7 Dismantle the remainder of the enclosure including scaffolding, platforms, decontamination facilities, tunnels, etc. Final clean the work area using HEPA vacuuming and wet wiping. Clean and remove all ground fault panels and temporary lighting.

3.3.6 Procedures for Re-Establishment of Objects and Systems

3.3.6.1 Re-establish mechanical and HVAC systems and install new clean air filters where previously removed. Re-establish all electrical system and return to as found condition unless otherwise specified.

3.3.6.2 Repair, replace and make good on all damages not identified during the per-removal survey.

3.3.6.3 Unless otherwise specified, all items and objects removed during the initial preparation phase of the work shall be returned to their original position and shall be properly mounted and secured.

END OF SECTION