Request for Quotations

For

Fairwind Senior Public School Window Replacement

Request for Quotations No.: **RFQMA24-5081**

Issued: **September 6, 2024**

Submission Deadline**: September 26, 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 a group of pre-qualified respondents to submit non-binding quotations for **Fairwind Senior Public School Window Replacement** 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 term of the contract is to be for a period starting **from the Award to August 29, 2025.**

1.4 Timetable

Issue Date of RFQ	September 6, 2024
Recommend Site Visit	September 17, 2024 ***Fairwind Senior Public School*** *at 10:00 A.M at* 5235 Fairwind Dr, Mississauga ON L5R3L2 All potential Respondents to meet at the front entrance and await direction from the Board representative(s).
Deadline for Questions	September 18, 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	September 19, 2024, 4:00 PM local time
Submission Deadline	September 26, 2024, 3:00 PM local time
Anticipated Execution of Agreement	October 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/projects/82227/details

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 the 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 the 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 the 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 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 **RFQMA24-5081** 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

(a) 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.

(b) Rates must be provided in Canadian funds, inclusive of all applicable duties and taxes except for HST, which should be itemized separately.

(c) 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.

(d) 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".

(e) 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.

(f) 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.

(g) 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 total for **Appendix 1 – Rate Bid Form** will be used for evaluation.

(b) **Appendix 2 – Supplementary Bid** will not to be evaluated.

3. Required Pricing Information

- **APPENDIX 1 – RATE BID FORM** (Bid Table **BT-25GS** in Bonfire Bidding System)

APPENDIX D – RFQ PARTICULARS

A. THE DELIVERABLES

Fairwind Senior Public School Window Replacement

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

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/1dpnv5apl3CmlF-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 in a timely manner and all training records, if applicable, are kept on file and are available upon Board request.

B. MATERIAL DISCLOSURES

The total estimated contract value is $380,000.00.

1. 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.

2. HAZARDOUS BUILDING MATERIALS

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

3. 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.

4. 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.

5. 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 the 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-25GS** in the Bonfire Bidding System)

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

3. Supplementary Bid – Appendix 2 – (Questionnaire **Q-56JM** 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) 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, all in accordance with Appendix F (Bonding).

The respondent agrees that on completion of the work the Performance Bond shall remain in force as a Maintenance Bond for a period of one (1) year from the date of acceptance of the building by the Board. It shall form a guarantee of workmanship and materials for the one (1) year period.

The latest editions of Forms 31 (Labour and Material Bond) and Form 32 (Performance Bond) are to be used for the bond.

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 E 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.

APPENDIX G - SPECIFICATIONS AND DRAWINGS

BID DOCUMENTS AND SPECIFICATIONS

FOR

Fairwind Senior Public School
5235 Fairwind Drive, Mississauga, ON
WINDOW REPLACEMENT

Prepared for:
Peel District School Board
933 Central Parkway West
Mississauga, ON L5C 2T9
Attention: Andrea Mazzuca

Prepared by:
Pinchin Ltd.
2360 Meadowpine Drive, Unit 2,
Mississauga, ON L5N 6S2
905.363.0678

SG-159-23/24-1

June 2024

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APPENDICES

Appendix A Designated Substance Audit Report – MTE file No. 55339-100.

DRAWINGS

A1 First Floor Plan
A2 Second Floor Plan
A3-A4 Window Schedule
A5-A6 Existing Window Conditions
A7 Proposed Window Details

PROJECT SCHEDULES

SCH-1 A0 – Window Matrix

END OF SECTION 00 01 10

1 OBJECTIVE

1.1 Work under this project will include replacing the windows shown on Drawings A0 to A2. The floor plans, schedules and details for the window under the base bid are shown on Drawings A0 to A4.

1.2 Additional work will include:

1.2.1 Sealant Replacement – Comprehensive replacement of all sealants around the perimeter of all the windows enclosed on red on the drawings A1 and A2.

1.2.2 For the window W13 located at the southeast corner of drawing A1 the contractors to price all the masonry work indicated on drawing 1/A4 and detail 4 of drawing A7.

1.3 Provide shop drawings and testing reports for the windows within 2 weeks after project award. After approval of all submittals, manufacturing and installation shall begin immediately upon approval of engineered shop drawings and mock-up.

1.4 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, 2025**. In the event that all work cannot be completed by **August 23, 2025** 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 work must be completed no later than **September 30, 2025**. General Contractor to include all costs that may result in extended after hour work. There will be no extra claims/premium rates allowed.

1.5 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.

1.6 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.

2 SCOPE OF WORK

2.1 General

2.1.1 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. Cost of on-site storage of windows for the duration of the project shall be paid for by the Contractor.
3. 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.

4. 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 windows within the work area. Correct all deficiencies caused by the work and make good any landscaping affected by the work.

2.1.2 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.

2.1.3 Mock-Up

At a location selected by PDSB, complete a full window installation and complete the specified air and water testing of the mock-up assembly on site.

2.2 HAZARDOUS MATERIALS

As per Designated Substance Audit Report form MTE Consultants Inc, No hazardous materials were identified or confirmed present during the assessment.

2.3 WINDOWS

2.3.1 Replace Windows

1. To the extent shown on Drawings A1 and A2, remove and dispose of the existing window assemblies where new windows W01, W02, W03, W03A, W03B, W03C, W04, W03A, W04, W05, W06, W07, W08, W09, W10, W11, W12, W13, and W14 are indicated.
2. Replacement windows shall consist of vented and drained rain screen fixed insulating glass units (IGUs) in fixed frames, a combination of operable awning sashes, and glass and metal spandrel panels as per the drawings. Frame location and frame depth to match existing frames unless indicated otherwise, with proportions to be as outlined in the drawings. Provide hardware and manual operators for all operable sashes. Interior and exterior finishes shall match the existing windows unless otherwise noted otherwise.
3. Windows shall be limited to an opening of 225mm (approximately 9”). However, locations where windows can open out to walkways, window edges shall be limited to the exterior face of the cladding/brick or the windowsill depth (typically 3.5”, Contractor to confirm).
4. Where there are existing A/C units, A/C units are to be removed and re-installed with 1” metal insulated panel instead of IGU. Insulated panel on exterior to match the spandrel colour (to be approved and confirmed by PDSB) and panel on the interior to match the interior trim). Contractor to have the panel fitted for the A/C unit.
5. Contractor to remove and reinstated interior window trim as required.

2.3.2 Blinds and drapes:

1. Contractor to remove and salvage the existing drapes and roller shades in all of the rooms included in the scope of work.
2. The drapes and roller shades will be removed as and when each window is being removed, not in advance.
3. The drapes and roller shades are to be labelled and neatly stored in a safe place on Site.

4. The installation of new drapes and roller shades will be completed by the Peel District School Board.
5. To facilitate expedited re-installation of drapes and roller shades Contractor shall complete installation of windows in each classroom in their entirety, including sealant and trim, prior to moving on to the next work location.

2.3.3 Provide sheet metal flashings and waterproofing membrane sub-sill flashings as shown on the Drawings. Additionally, Contractors to include panning/trim, column covers, and additional metal paneling to match the existing conditions.

2.4 Miscellaneous

2.4.1 Perimeter Sealants - Install compatible interior and exterior sealants to render window installations weather-tight.

2.4.2 Damage

1. Any damage (as determined by the Consultant) to the interior finishes, interior windowsills, baseboard heating elements/covers, electrical chases, tiles, ceiling finishes, drywall/plaster, flooring, etc. shall be repaired at the Contractor expense with no cost to the PDSB. Notify the Consultant for review of such locations immediately upon discovery. Repairs to locations where notice is not provided shall be paid for at the Contractor's expense.

2.4.3 All Other Items

1. Examine job 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. Replace rotten, damaged, or missing wood blocking, as required.
2. Remove and re-install any mechanical/electrical components, as required. Radiators are to be covered and protected prior to and for the duration of the work.
3. Include for all labor, equipment, materials and access required to complete the project not otherwise itemized above.

END OF SECTION

1 GLAZING

1.1.1 IGMAC Certificate – Submit up to date IGMAC certificate from IGU manufacturer.

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

2 ALUMINUM WINDOWS

2.1 TEST DATA

2.1.1 Submit certified copies of test data from approved independent testing agency to demonstrate compliance with design and performance criteria specified.

1. CSA A440 Laboratory Test Reports for all proposed window types indicating compliance with performance levels specified, including detailed drawings of tested windows, issued by certified testing agency. Test report(s) must be for a representative window which is not smaller than largest window used in Work. Provide engineered shop drawings and calculations to prove adequate wind load resistance, and deflection for windows that exceed the test sample. Under no circumstances shall the project windows exceed the test sample size by more than 25%.

2.2 SHOP DRAWINGS WINDOWS

2.2.1 Show rough opening requirements and maximum tolerances of adjacent construction in shop drawings. Indicate relationship to other wall components, such as flashings, sheathing, and sheathing membrane. Locate sealants. Include all information as required to show compliance with Bid Documents.

2.2.2 Submit the following shop drawings to Consultant for review:

1. Layout of all typical windows, including overall height and width, clear opening height and width of operable units and direction of opening of operable units.
2. All components of window assemblies in as large a scale as practical, including, but not limited to:
    1. Methods of interfacing with adjacent cladding;
    2. Coupling of framing members;
    3. Material types and thicknesses for all extrusions (including type and properties of metal alloys);
    4. Vertical and horizontal sections through mullions and frames;
    5. Number and spacing of anchors, including shimming details;
    6. Location of setting blocks;
    7. Hardware, including latches, handles, locking devices and weatherstripping; and
    8. Size and number of drain/vent holes.
3. Glazing details including, but not limited to, glass and IGU thicknesses (including any variation over building height), description of IGU perimeter seals and spacer materials.
4. 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.

2.2.3 Obtain reviewed engineered stamped shop drawings before assembly of window units. All fastening patterns, embedment depths of fasteners, substrate conditions, shall be clearly shown on shop drawings.

2.3 SHOP DRAWINGS

Submit shop drawings to Consultant for review. Doors and frames to be coded as per schedule. The shop drawings shall include:

2.3.1 Detail method of assembly, reinforcing, fastening, field jointing, splicing, stop securing.

2.3.2 Type, thickness and gauge of all materials.

2.3.3 Material and quality of all finishes.

2.3.4 Doors and frames bearing ULC labels for ratings and opening classifications.

2.3.5 Identify, mark and key for site locations. Markings to be concealed when hollow metal items are installed and finished.

2.3.6 Legend indicating all abbreviations and symbols

2.3.7 Layout of all typical doors, including overall height and width, size of IGUs/ vision units/ spandrel panels in the assembly.

2.3.8 Door swing

2.3.9 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

2.3.10 Hardware schedule for each door

2.3.11 Glazing details including, but not limited to, glass and IGU thicknesses, description of IGU perimeter seals and spacer materials. – All glazing to match windows IGU.

2.4 COLOUR CHARTS FOR THE DOOR SLAB AND FRAME PAINT

2.5 MOCK-UPS- WINDOW

2.5.1 After award of bid document and prior to start of general installation, install a mock-up of all typical windows 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. Complete air and water leakage testing of the mock-up. Testing to be completed in accordance with ASTM E783 and ASTM E1105, to the specified performance parameters. First test will be paid by PDSB, costs for any subsequent tests as a result of failures shall be borne by the Contractor. Cost for the Consultant's extra visit shall also be borne by the Contractor.
6. Mock-up installation and testing shall be complete, to the satisfaction of PDSB and the Consultant, prior to proceeding with general installation.

3 WARRANTIES WINDOWS AND DOORS

3.1 GENERAL

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

3.2 REMOVALS AND DEMOLITION

3.2.1 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.

3.3 GLAZING

3.3.1 The Supplier shall provide a manufacturer's warranty for the sealed insulating 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.

3.3.2 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.

3.3.3 The warranty shall not be pro-rated over the ten (10) year period.

3.4 HOLLOW METAL DOOR AND FRAME

3.4.1 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.

3.4.2 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.

3.4.3 Finish paint adhesion on all door and frame product 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

3.5 SEALANTS

3.5.1 The contractor shall provide a manufacturer's warranty for all work of this section against defects in materials and workmanship for a period of ten (10) years. The written warranty shall be in a form approved by the Owner. The warranty shall cover all components of the sealant.

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 ten (10) years.

The warranty shall not be pro-rated over the ten (10) year period.

3.6 ALUMINUM PANNING/TRIM:

3.6.1 The Supplier shall provide a manufacturer's warranty for the aluminum panning/trim 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.

3.6.2 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.

The warranty shall not be pro-rated over the five (5) year period.

END OF SECTION

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.

1.2 DESCRIPTION OF WORK

.1 Work will include:

.1 Removal of materials not to remain as part of the new work.
.2 All locates required for the safe excavation.
.3 Other materials required to facilitate the work.

1.3 RELATED WORK

.1 Section 04 21 00 - Clay Unit Masonry
.2 Section 07 92 00 - Sealants

1.4 PERMITS AND REGULATIONS

.1 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 AND 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 curbs and light standards.

3.2 DEMOLITION AND REMOVAL

.1 Remove and dispose of existing masonry components. Stage the removal of the existing face brick units and block masonry units in sections to ensure adequate support for units above. Ensure that the method of removal does not damage the existing adjacent masonry units, block masonry units and mortar joints or other substrates which are to remain.

.2 Remove and dispose of existing exterior sealant components, sheet metal, wood, and asphalt materials as required to complete the work as specified. Ensure that the method of removal does not damage the existing adjacent wall components or substrates which are to remain.

.3 Remove soil, paving, and other landscape materials, to complete the work as specified. Ensure that the method of removal does not damage the existing adjacent wall components or substrates which are to remain.

.4 Remove and relocate components such as electrical, mechanical, fence to facilitate the work (if necessary/applicable).

.5 Use extreme care at all times. Confine effects of demolition to those parts which are to be demolished.

.6 Perform work in a manner so as not to inconvenience persons outside those parts which are to be demolished.

.7 Do not overload any roof, floor or wall with accumulations of material or debris or by any other loading.

.8 Do not sell or burn materials on site.

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

.10 Leave work in safe condition so that no part is in danger of toppling or falling at end of each day's work.

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

.12 Leave exterior walls and roof in a watertight condition at end of each work day. Provide and adequately secure temporary fire resistant tarps as required when exterior walls are left open overnight.

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 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 exterior and interior work area for duration of work.

.3 Provide temporary fence barriers (i.e., Insta-fence), guard rails, overhead protection, and other protection as required, to give full protection to occupants, general public, and workers employed on the demolition, and to adjacent buildings, properties and landscaping.

.4 Protect adjacent building surfaces and properties against damage which might occur from falling debris or other causes related to the work. Maintain free and safe passage to and from and within the buildings.

.5 Provide temporary protection against weather where work leaves unprotected openings in exterior walls of building.

.6 Prevent debris from blocking any building, site or municipal drainage system.

END OF SECTION 02 41 00

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

.1 Supply, place, finish cast in place concrete at designed work areas.

1.2 RELATED WORK

.1	Summary of Work	Section 01 11 00
.2	Clay Unit Masonry	Section 04 21 00

1.3 REFERENCE STANDARDS

.1 Canadian Standards Association (CSA) (CAN/CSA)

.2 CAN/CSA A23.1-14 Concrete Materials and Methods of Concrete Construction

.3 CAN/CSA A23.2-14 Test Methods and Standard Practices for Concrete

.4 CAN/CSA A3000-13 Cementitious Materials Compendium

1.4 SUBMITTALS

.1 At least 2 weeks prior to initial concrete placement, submit the following items to the Engineer:

.1 Concrete supplier and certification that plant, equipment and materials utilized in concrete production comply with the requirements of CAN/CSA A23.1.

.2 Proposed concrete mix design including source of all constituent materials and admixtures.

.3 Technical data sheets and material safety data sheets (MSDS) for all proposed products.

1.5 WARRANTY

.1 Provide a two (2) year warranty for work of the section against delamination, scaling, debonding, cracking and disintegration and other forms of deterioration.

.2 Correct deficiencies immediately.

PART 2 – PRODUCTS, MATERIALS & EQUIPMENT

2.1 MATERIALS

.1 Aggregates: normal density, satisfying the physical and gradation requirements of CAN/CSA-A23.1.

.2 Cement shall be Type GU Normal Portland Cement to CSA-A3000;

.3 Water: potable, from municipal water main.

.4 Air-entraining mixture: to ASTM C260.

.5 Chemical admixtures: if used, shall conform to the requirements of ASTM C260 and shall be compatible with the each other and the air-entraining admixture.

.6 Calcium chloride or any admixture containing chloride shall not to be used in the Work.

.7 Curing compounds: if used, must be compatible with any finishes to be applied and shall conform to CAN3 CSA-A23.1.

.8 Premolded expansion joint fillers: bituminous joint filler to ASTM D994.

.9 Provided new rebar as indicated on the drawings.

2.2 CONCRETE MIXES

.1 Proportion normal density concrete in accordance with CAN/CSA- A23.1 to satisfy the following requirements:

.1 Compressive Strength at 28 days: Minimum 32 MPa for Class C-2 exposure.

.2 Maximum water/cementing material ratio 0.45.

.2 Exposure classification:

.1 C-2 Non-structurally reinforced concrete exposed to chlorides and freezing and thawing including: pavements, sidewalks, curbs and gutters.

.2 Nominal size of coarse aggregate: 20 mm.

.3 Slump at time and point of discharge: ±20 mm of design slump.

.4 Air Content: Category 1, 5-8 %.

PART 3 – EXECUTION

3.1 NOTIFICATION

.1 Provide 24 hr. notice to the Consultant prior to placing concrete.

3.2 CONCRETE PLACEMENT

.1 Place cast-in-place concrete in manner consistent with good construction practice for this type of work. Supply, mix, place, consolidate, finish, and cure concrete in strict accordance with CAN/CSA-A23.1.

.2 Vibrate concrete to ensure complete consolidation.

.3 Provide a smooth, dense, finish, free of blemishes by troweling with aluminum or magnesium trowels.

.4 No water shall be added to the concrete mix or added to the placed concrete.

.5 Saw-cut control joints within 24 hours of concrete placement, after concrete has sufficiently hardened but prior to the initiation of any cracks in the new concrete.

.6 Maintain accurate records of concrete placement to indicate date, location, air temperature and field test results and test samples taken.

3.3 FINISHING

.1 Finishing of the concrete surface shall be done while it is sufficiently plastic to achieve the desired grades, elevations, and texture.

.2 The Contractor shall ensure that excessive fines and water are not drawn to the surface.

.3 No material shall be applied to the concrete surface or the finishing tools to aid in the finishing.

.4 The surface shall be smooth, free from open texturing, undulations, projections, and ridges and shall be struck off true to grade and cross-section.

3.4 CURING

.1 Curing and protection shall be in accordance with CAN/CSA-A23.1. Apply curing as soon as possible after finishing, and without damage to the surface.

.2 Protect the repair areas from damage during the curing period. Do not permit chipping operations adjacent to the new concrete for a minimum of seven (7) days after the installation of cast-in-place concrete.

.3 The cast-in-place concrete should be shaded from direct sunlight or excessive wind for seven (7) days.

.4 Curing temperatures shall be maintained between +10°C and +30°C for the entire curing period.

.5 The contractor shall supply and install temporary heat and enclosures, including cost of installation, fuel, ventilations, operation, maintenance and removal of equipment at no additional cost when the curing temperature has or is expected to drop below 10ºC during the curing period. The use of direct-fired heaters discharging waste products into work areas will not be permitted.

3.5 DEFECTIVE WORK

.1 Remove and replace concrete that fails to meet specified requirements.

.2 Remove and replace any debonded or honeycombed material. Repair any cracks 1 mm or more in width.

.3 Submit details of removal and repair method to the Consultant prior to commencing such work.

END OF SECTION 03 30 00

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

.1 The General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section, and all related sections.

1.2 RELATED WORK

.1	Selective Demolition	Section 02 41 00
.2	Sealants	Section 07 92 00

1.3 RELATED BY-LAWS AND STANDARD SPECIFICATIONS

.1 By-Laws

.1 Conform to the requirements of the Ontario Building Code (latest edition) and all amendments, and all local, municipal and provincial building by-laws and ordinances.

.2 Standard Specifications

.1 Except where modified by this section, the specifications listed below shall govern:

Standard No.	Title
CSA-A165 Series-94 (R2000)	CSA Standards on Concrete Masonry Units
CSA-A179-04	Mortar and Grout for Unit Masonry
CSA-A370-04	Connectors for Masonry
CSA-A371-M94 (R1999)	Masonry Construction for Buildings
CSA-S304.1-94 (2000)	Masonry Design for Buildings (Limit States Design)
CAN/CSA-A82.1-M87 (R1999)	Burned Clay Brick (Solid Masonry Units Made from Clay or Shale)
CAN3-A82.2-M78 (R1998)	Methods of Sampling and Testing Brick

1.4 SUBMITTALS

.1 Source Quality Control

.1 Manufacturers of clay and concrete masonry units must submit independent laboratory test reports performed within the twelve-month period immediately prior to date of delivery of material, certifying compliance of masonry units and mortar components with specification requirements.

.2 For clay units, in addition to requirements set out in reference standards, include data indicating Initial Rate of Absorption (IRA) for units specified.

1.5 QUALITY ASSURANCE

.1 Installer Qualifications

.1 For clay units, in addition to requirements set out in reference standards, include data indicating Initial Rate of Absorption (IRA) for units specified.

.2 Installation

.1 Perform work of this section in strict accordance with these specifications, standards referenced herein, and with all warranty requirements.

.3 Pre-Installation Meeting

.1 Convene a pre-installation meeting for the work specified in this section. Attendees must include, as a minimum, representatives of the following:

.1 Contractor (Site Superintendent & Project Manager)
.2 Installation Subcontractor (Site Foreman & Project Manager)
.3 Consultant

1.6 DELIVERY, STORAGE & HANDLING

.1 Deliver materials to job site in dry condition. Keep materials dry until use except where wetting is specified.

.2 Deliver all masonry units cubed and banded on hardwood pallets, with polyethylene "shrink-wrap", or other non-staining covering. Prevent damage to units.

.3 Deliver mortar materials in original unbroken and undamaged packages with manufacturer's name and brand distinctly marked thereon, and upon delivery store in dry shed until used on work.

.4 Store or pile sand on a plank platform and protect from dirt and rubbish. Store mortar materials and sand in such a manner as to prevent deterioration or contamination by foreign materials.

.5 Lift skids with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect edges and corners.

.6 Store masonry in a manner designed to prevent damage and staining of units.

.7 Place polyethylene or other plastic film between wood and other finished surfaces of units when stored for extended periods of time.

.8 Cover stored units with protective enclosure if exposed to weather.

.9 Do not use salt or calcium-chloride to remove ice from masonry surfaces.

1.7 PROJECT CONDITIONS

.1 Cold Weather Requirements

.1 Supplement Clause 5.16.2.1 of CSA-A371 with the following:
.1 Maintain mortar temperature between 41°F and 122°F for a minimum of 3 days after setting.

.2 Hot Weather Requirements
.1 Supplement Clause 5.16.4 of CSA-A371 with the following:
.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.

1.8 WARRANTY

.1 The Contractor shall provide a **written warranty for a period of two (2) years** from the date of substantial completion of the project as certified by the Consultant.

.2 The Contractor shall warrant that the masonry repairs will be free of defects related to workmanship or material deficiency. The following shall be specifically covered under the warranty:
.1 Cracking, debonding and/or spalling of the brick masonry.

.3 Any repair required under the warranty will be carried out in accordance with the recommendations of the Consultant.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Use same suppliers of masonry units, accessory materials and source of aggregate for entire project.
.2 Portland cement: Type 10 to CSA-A5.
.3 Blended Cement: to CSA-A362.
.4 Aggregates: to CSA-A23.1.
.5 Hydrated Lime: to ASTM C207.
.6 Supplementary Cementing Materials: to CSA-A23.5.

2.2 CLAY MASONRY UNITS

.1 Burned clay brick conforming to CAN3-A82.1-M87, SW Grade. Size, compressive strength, colour, finish, and texture to match existing where exposed. Size and compressive strength to match existing where not exposed.

2.3 HORIZONTAL REINFORCEMENT

.1 Horizontal reinforcement shall be sized to suit width of masonry in accordance with CSA-A371. Undersized or oversized reinforcing is not acceptable.

.2 Provide pre-manufactured "L" and "T" corner units. Crimped metal strap ties are not acceptable for connecting intersecting walls.
.3 Corrosion Protection: to CSA-A370, stainless steel for metal ties and horizontal reinforcing in exterior walls.

.4 Single Wythe Masonry: Standard 9 gauge wire stainless steel to CSA-A370.
.1 Blok-Lok® BL-10, by Blok-Lok Ltd.; or,

.2 DW-200 Ladur, by Dur-o-Wal Ltd.
.3 Or approved equivalent.

2.4 STRUCTURAL STEEL LINTEL

.1 Steel Lintel: New stock, conforming to CAN/CSA G40.21 M92, Grade 300W, size to match existing. All lintels to be hot dipped galvanized with 600 g/m2 zinc coating to CSA Standard G164-M92.

.2 Rust Inhibitive Primer: Sealtight Galvafroid, zinc-rich coating as manufactured by W.R. Meadows of Canada Limited or approved equivalent.

2.5 MASONRY ACCESSORIES

.1 Brick ties: Stainless steel wall tie, such as Helifix as supplied by Helifix North America Corporation, Helico Sprio-Ties as supplied by JV Building Products, or an approved equivalent. Diameter to be 8 mm. Length to suit application. Sample to be reviewed by Consultant.

.2 Retrofit wall ties: Stainless steel remedial wall tie system, such as Helifix Dryfix Masonry Pinning system as supplied by Helifix North America Corporation, Helix Spiro Ties as supplied by JV Building Products, Dur-O-Flex Friction Pin as manufactured by Dur-O-Wal Inc., or an approved equivalent. Diameter to be a minimum of 8 mm. Length to suit application. Sample to be reviewed by Consultant.

.3 Fasteners for masonry and concrete substrates: "Tapcon" fasteners with "Climaseal" corrosion resistant finish, as manufactured by Buildex/Red Head, or approved equivalent. Length to suit material thickness.

.4 Prefinished sheet metal: Galvanized steel, 0.71mm (24 ga) core nominal thickness, Z275 zinc coating to ASTM A525M-80. Finish to be Stelco's 5,000 series or an approved equivalent. Finish to be applied to all surfaces. Colour to match the existing sheet metal flashings and to be approved by the Owner.

.5 Isolation coating: alkali resistant bituminous paint.

2.6 MORTAR AND GROUT

.1 Use aggregate passing 0.046" sieve where 6 mm thick joints are indicated, to CSA-A179.

.2 Mortar Colour
.1 Coloured mortar pigment manufactured by Elementis Pigments or approved equivalent. Colour shall be as selected by the Consultant. Colour Loading: F-Series (6%).

.3 Mortar for all exterior masonry above grade: Portland cement/hydrated lime, Type "N" (1:1:6) based on specifications of CSA-A179.

.4 Mortar for foundation walls, manholes, sewers, pavements, walks, patios and other exterior masonry at or below grade and under joist and beam bearings and other locations noted on the structural drawings: Type "M" based on specifications of CSA-A179.

.5 Mortar for interior concrete masonry and all load-bearing masonry above grade, including inner wythe of exterior cavity walls: Type "S" based on specifications of CSA-A179.

.6 Grout: for masonry shall be pre-mixed, high strength, non-shrink cementitious grout, to CSA-A179, with minimum compressive strength of 4350 psi (30.5 MPa).

2.7 ACCESSORIES

.1 Weepers & Vents: "Cell-Vent" by Dur-o-Wal, or Bloc-Lok or approved equivalent. Colour as selected by Consultant.

.2 Insulation Retainer: Proprietary for use with masonry ties; by Fero Corporation, or by Bloc-Lok Ltd. or approved equivalent. Insulation retainers must be from same manufacturer of masonry veneer ties.

.3 Cavity Mortar Control: woven nylon or polyester mesh, 1" thick x 10" high;
- .1 Mortar Maze®, by Advanced Building Products Inc., Springvale MN (distributed by Form & Build Supply Inc.), or
- .2 Mortar Net™, by Mortar Net USA Ltd. or approved equivalent.

.4 Control Joint Block Fillers: "Titewall" by Bloc-Lok Ltd., or "Rapid Control Joint" by Dur-o-Wal or approved equivalent.

.5 Through-wall Flashing & Damp-proof Course: self-adhesive, SBS modified bitumen membrane:
- .1 Blueskin TWF by Bakor or approved equivalent.

.6 Flashing & Damp-proof Course Primer: polymer emulsion based primer, Blueskin Aquaprime by Bakor or approved equivalent.

.7 Through-wall Flashing Support: 0.015" thick hot-dip galvanized sheet steel, formed to suit.

2.8 FABRICATION – SHEET METAL

.1 Fabricate drip flashing with prefinished sheet metal as indicated on Drawings.

.2 Use competent mechanics and work accurately to details indicated and as herein specified.

.3 Fabricate drip flashing in maximum practical lengths to minimize joints. Locate joints where directed by Consultant. Make allowance for movement at joints.

.4 Hem all exposed edges at least 12 mm for appearance and stiffness.

.5 Form sections square, true, and accurate to size, free from distortion, oil canning and other defects detrimental to appearance or performance.

.6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar joints.

PART 3 - EXECUTION

3.1 QUALITY OF WORK

.1 Perform masonry work in accordance with CSA-A3710-14 Standard Masonry Construction for Buildings except where specified otherwise.

.2 Build masonry plumb, level, and true to line, with vertical joints in alignment.

.3 Perform masonry mortar and grout work in accordance with CSA-A179-04 (R2014) Standard Mortar and Grout for Unit Masonry except where specified otherwise.

.4 Provide temporary bracing of all masonry walls until permanent bracing is installed.

.5 Lay out coursing and bond to achieve correct coursing heights and continuity of bond above and below openings, with minimum of cutting.

.6 Machine cut all exposed masonry units where adjusted in size.

.7 Tolerances in notes to Article 5.3 of CSA-A3710-14 apply.

.8 Remove chipped, cracked, or otherwise damaged units and replace with new.

.9 Coordinate work of this section with work of mechanical and electrical trades for conduit, piping, and other items built-in to masonry work. Masonry Subcontractor must cooperate with mechanical and electrical trades, for placement of such items within masonry walls.

3.2 LAYING CONCRETE MASONRY UNITS

.1 Bond
- .1 Interior Concrete Block: Running Bond.
- .2 Exterior Architectural Block: Running Bond. Provide Stack Bond where indicated on the elevations.

.2 Tooth bond all intersections of walls and partitions unless otherwise indicated.

.3 Coursing height: standard metric coursing.

.4 Construct all interior masonry walls full height to underside of structure or deck above, unless otherwise shown. Leave 1" void between top of wall and structure above. Fill void with mineral wool insulation.

.5 Set bearing plates for joists, beams, etc., at locations and elevations indicated, and grout into place.

.6 Jointing
- .1 Concave: all joints exposed to view, and where paint or other finish coating is specified.
- .2 Flush: all concealed joints, and all joints within wall cavities.

.7 Special Shapes

- .1 Provide Bull-nose block at all vertical exposed outside corners.
- .2 Provide Bullnose block at all exposed windowsill outside corners.
- .3 Provide Universal Knock-out blocks for chases for piping and conduit.
- .4 Provide A-Blocks for all vertical reinforcing locations.
- .5 Provide Lintel blocks over all openings where steel lintels are not specified.
- .6 Provide Sash blocks at both sides of all control joints.

.8 Provide lightweight block for all fire-rated applications and all exposed block to receive paint finish.

.9 Provide standard weight block for all non-fire rated applications, where concealed.

.10 Provide solid masonry units where required for mechanically fastening of blocking, furring or mechanically applied finishes.

.11 Do not form chases in load-bearing walls less than 10" thick. Do not form chases closer than 6'-6" apart in any wall, unless otherwise shown.

.12 Do not construct horizontal chases for piping or conduit unless other reasonable means of allowing for services are impossible. Where horizontal chases are required, construct chases using lintel blocks filled solid with concrete fill as specified.

.13 Build in conduits as required without breaking bond.

3.3 CONCRETE MASONRY LINTELS

.1 Install reinforced concrete masonry lintels over all openings in masonry wider than 16" where steel or reinforced concrete lintels are not indicated.

.2 Reinforced concrete masonry lintels may be formed on the ground and lifted into place.

.3 End bearing shall be not less than 8".

.4 Maintain sufficient support for lintels until initial compressive strength of concrete fill is reached (min. 7 days).

3.4 THROUGH-WALL FLASHING AND DAMPPROOF COURSE

.1 Clean and wire-brush all surfaces to receive through-wall flashing or damp-proof course. Remove all dirt, oil and loose mortar material.

.2 Prime all surfaces to receive through-wall flashing or damp-proof course at a rate of 1 gal./100-300 ft membrane and allow to dry for 30 minutes before applying

.3 Position membrane to allow for minimum 2" laps at all edges.

.4 Roll back membrane and remove release paper. Press membrane firmly into primer. Roll membrane and seams to ensure full contact.

.5 Seal all laps as required by manufacturer.

.6 Where membrane traverses cavity unsupported by substrate or other means, provide continuous galvanized bent metal flashing support mortared into back-up wythe of masonry (or fastened to steel studs), and continuous to outside face of exterior wythe of masonry.

.7 Provide watertight end damn terminations at doors or transition to windows/window wall.

.8 Minimum vertical height of metal flashing support shall be 8".

3.5 VERTICAL REINFORCING

.1 Place vertical reinforcement in cells of concrete unit masonry as detailed on the drawings. Provide A-Blocks where required to facilitate ease of placement.

.2 Place vertical reinforcement accurately and secure against displacement by using ties or clips. Tack welding of reinforcement to secure in place will not be permitted.

.3 Secure vertical reinforcement in walls using sufficient spacers on each face to maintain the requisite distance between reinforcement and wall face and so that vertical bars are plumb. Provide spreader bars spaced at 6'-6" centers in both directions.

.4 Place concrete fill in masonry unit cells, in maximum 2 course lifts. Vibrate to remove all air pockets.

3.6 HORIZONTAL REINFORCING & WALL TIES

.1 At all single and double wythe concrete masonry walls, install reinforcing at vertical intervals of 16" maximum and lapped 6" at each splice.

.2 Provide reinforcement/veneer ties in the first, second and top bed joints at 8" vertical spacing, every second joint thereafter.

.3 Provide additional reinforcement/veneer ties immediately above lintel and below sill courses, extending 24" beyond each jamb.

.4 Provide masonry veneer ties at exterior cavity walls with CMU back-up, at vertical intervals of 16" maximum, and horizontal intervals of 24" maximum.

.5 Provide masonry veneer ties at steel stud back-up at vertical intervals of 24" maximum, and horizontal intervals of 16" maximum.

.6 Fasten veneer ties to sides of steel studs using #10-16 coated sheet metal screws, minimum 2 screws per tie (diagonally).

.7 Install insulation retainers at every veneer tie point.

3.7 LATERAL SUPPORT AND ANCHORAGE

.1 Provide lateral support and anchorage in accordance with CAN3-S304, and as indicated on the drawings.

.2 Where walls exceed the limits stated in CAN3-S304, provide partition stabilization anchors at top of masonry partitions for full length of wall at 4'-0" o.c. maximum.

3.8 LAYING CLAY MASONRY

.1 Bond: Running Bond (1/2 – centered) or to match previously existing.

.2 Coursing height: to match existing.

.3 Jointing: concave where exposed, flush in all cavity spaces.

.4 Mixing and Blending: mix units within each pallet and with other pallets to ensure uniform blend of colour and texture.

.5 Install special corner units and other special shapes where specified or indicated on the drawings.

.6 Clean unglazed clay masonry as work progresses.

3.9 CONTROL JOINTS

.1 Provide vertical control joints to CSA-A371, at previously existing locations.

.2 Width of control joints shall be 3/8". Joints to have backer rod and sealant to match colour of grout at that location.

.3 Horizontal reinforcing shall be continuous across control joints.

.4 Control joints shall be continuous across thickness of exterior wall. Where vertical joints in wythes of brick and block do not align, offset of maximum 8" is allowable.

.5 Where not otherwise shown or detailed, the following minimum requirements for vertical control joints in unit masonry shall apply:

.1 Above all openings in masonry, extending from end point of lintel to top of masonry.
.2 At all structural column or pilaster locations.
.3 All locations where structural substrate changes.
.4 At all uninterrupted panels of masonry. Maximum panel width shall be 23'.
.5 Within 40" each side of changes in direction of wall.

.6 Provide sash block units on both sides of control joint for full height of joint.

.7 Ensure control joint is free of all mortar.

.8 Install pre-manufactured control joint material continuously for full height of joint. Caulk control joints in accordance with Section 07 92 20.

3.10 JOINTING

.1 Allow joints to set sufficiently to remove excess water;

.2 Concave Joints: tool with round jointer to provide smooth, compressed, uniformly concave joints.

.3 Strike flush all joints concealed in walls and joints in walls to receive plaster, tile, insulation, or other applied material except paint or similar thin finish coating.

.4 Remove all excess mortar from surface of masonry.

3.11 WEEPERS & VENTS

.1 Provide weepers at base of all exterior cavity walls at 16" o.c. maximum, and vents at top of all exterior cavity walls at 4’-0" o.c. maximum.

.2 Provide weepers in walls above junctions with roofs and above windows exceeding 8'-0" in length.

3.12 JOINING OF WORK

.1 Where necessary to temporarily stop horizontal runs of masonry, and in building corners, step-back masonry diagonally to lowest course previously laid. Do not "tooth-in" new masonry. Fill in adjacent courses before heights of stepped masonry reach 4'-0".

3.13 SUPPORT OF LOADS

.1 For all masonry under concentrated loads, where concrete fill is used in lieu of solid units, use 30 MPa concrete for width and depth equal to 3 times the length of bearing.

.2 Use grout to CSA-A179 Standard where grout is used in lieu of solid units.

.3 Install building paper below voids to be filled with concrete. Keep paper 1/2" back from faces of units.

3.14 FIELD QUALITY CONTROL

.1 Prior to commencement of construction, the masonry Subcontractor shall prepare and mix on-site, under supervision of the Consultant and the Inspection and Testing Authority, mortar samples to determine compliance with the specifications

.2 Tests of such samples shall determine a ratio-by-mass value or "control value" for mortar mixes.

.3 Masonry Mortar shall be tested in accordance with CSA-A179 Standard; Mortar and Grout for Unit Masonry, supplemented as follows:

.1 Additional cubes shall be poured under on-site conditions for comparison with "ideal" samples.

.4 Subsequent sample ratio tests taken during the course of construction shall not vary from the control value by more than 15%.

END OF SECTION 04 21 00

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

.1 Supply all materials, labour, and equipment required to perform brick replacement and/or masonry repairs on wall areas indicated, to the full intent of the Drawings and Specifications, including but not limited to, the following:

.1 Perform all required site investigations to be able to carry out the specified work.

.2 Identify and once approved, remove all brick-and-mortar joints, where indicated.

.3 Perform mockup installation of mortar repointing and masonry replacement and allow for review by the Consultant before proceeding with full scale replacement.

.4 Supply and install new brick masonry at all areas indicated on the drawings. Supply and install new stainless steel masonry ties and new flashings and sealants as required.

.5 Maintain walls in a watertight condition at all times during the Work by means of temporary covers and/or tarpaulins, or permanent wall repairs.

.6 Perform daily and final clean-up of the work area and surrounding areas and site.

1.2 GENERAL REQUIREMENTS

.1 Comply with requirements for mortar and grout, masonry connectors, and masonry construction as specified in CSA standards A179, A370 and A371. In case of discrepancies, the more stringent requirements between the CSA standards and the specifications will apply as determined by the Consultant.

.2 Work shall be executed to the highest standards of workmanship in the industry, by experienced masons.

.3 All supplied materials shall be new and in perfect condition, free from defects that may impair bond, strength, performance, durability or appearance.

1.3 RELATED WORK

.1 Section 01 11 00 – Scope of Work
.2 Section 03 30 00 – Cast-in-Place Concrete
.3 Section 07 92 00 - Sealants

1.4 REFERENCE STANDARDS

.1 Canadian Standards Association (CSA):

.1 S304.1-04, “Design of Masonry Structures”

.2 CAN/CSA-A82.1-M87 (R2003), “Burned Clay Brick (Solid Masonry Units Made from Clay or Shale)”

.3 A179-04, “Mortar and Grout for Unit Masonry”

.4 A370-04, “Connectors for Masonry”

.5 A371-04, “Masonry Construction for Buildings”

.6 ASTM C 140, “Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units”.

1.5 SOURCE QUALITY CONTROL AND TESTING

.1 Provide one foreperson in charge thoroughly familiar with all masonry work and methods for execution of work in this Section.

.2 Provide access, during repairs, to permit Consultant to examine the Work. Allow time during construction for access and inspection of the work by the Consultant.

.3 Contractor to pay for all tests and inspections required by the Consultant at no additional cost to the Owner on corrected work, when initial tests and inspections reveal that work fails to meet the specifications requirements.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials following manufacturer’s instructions.

.2 Deliver materials to job site in dry condition. Keep materials dry until use, except where wetting of masonry units is specified.

.3 Store materials under a waterproof covering on elevated platforms protected from moisture, contamination and construction activity. Protect materials from freezing and contamination.

.4 Isolate masonry units from contact with ground and other materials to prevent staining.

.5 Handle and store masonry units to prevent soiling, cracking and chipping.

.6 Remove and replace damaged or broken materials.

.7 Deliver and store materials in original packages with labels intact.

.8 Do not transport materials through the building.

.9 Do not overload existing building structure with materials.

1.8 PROTECTION

.1 Provide tarping during masonry removals to reduce dust migration to neighboring buildings and site areas.

.2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashings or other permanent construction. Covers shall be well secured against displacement.

.3 Protect masonry and other work from being marked and other damage. Protect completed work from mortar droppings. Use non-staining coverings.

.4 Provide temporary bracing to masonry work during and after erection, and to walls that become laterally or vertically unsupported due to removal of existing structure until permanent lateral and vertical support is in place.

.5 Prevent precipitation and debris from entering openings during work.

.6 Mortar temperatures shall not exceed 50°C, to avoid flash set.

1.9 HOT WEATHER REQUIREMENTS

.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.

1.10 SAFETY REQUIREMENTS

.1 Provide a respirator, which may include a single-use respirator, designed for protection against silica exposure. Ensure workers wear respirators when grinding existing mortar joints.

1.11 WARRANTY

.1 The Contractor shall warrant that the masonry will be free of defects related to workmanship and/or material deficiency. Defective installation covered under the warranty shall include, but not be limited to, cracking, spalling, corrosion of ties, change of colour, loss of anchorage and securement, failure of members and/or connections, dissimilar metal corrosion, staining of adjoining or adjacent materials or surfaces, or other deterioration.

.2 Correct deficiencies immediately at no additional cost to the Owner. Any repair(s) required under the warranty shall be carried out in accordance with the requirements of this Specification and with the recommendations of the Consultant. Repair to include removal of defective components and installation of replacement components, including removal and replacement of adjacent materials as required to allow for proper replacement.

PART 2 – PRODUCTS

2.1 MASONRY UNITS

.1 New burned clay brick conforming to CAN/CSA-A82.1, “Burned Clay Brick”.

.1 Meridian, Belden and Glen-Gary; or, approved alternate.

.2 Colour: to match existing.

.3 Size: to match existing

.4 Provide samples as required including colour, finish, and texture for Owner’s approval.

.2 Full Solid concrete block units: CAN3 A165.1, Classification SF/20/A/M; sizes to meet design intent:

.1 Browns Concrete; or approved alternate.

.2 Colour: to match existing.

.3 Size: to match width of existing brick.

.4 Provide samples as required for the Owner's approval.

2.2 MORTAR

.1 Type S masonry cement confirming to CSA A3002 and CSA A179: St Mary's Type S Masonry Cement; or approved alternate.

.2 Sand: To material requirements of aggregates in CSA A179-04, "Mortar and Grout for Unit Masonry".

.3 Water: potable or from approved non potable supply, clean and free of deleterious materials such as acid, alkali and organic material, to CSA Standard A179.

.4 Lime:

.1 Hydrated lime: to ASTM C207, Type NA, hydrated lime containing air entrainment.

.5 Portland cement: to CSA-A3001, "Portland Cement", Type GU, non-staining.

.6 Colour: ground coloured natural aggregates. Composition not exceeding 15 percent of weight of binder materials.

.7 Admixtures for the purpose of acceleration, air entraining admixtures, cementitious materials containing air entraining admixtures, calcium chloride or admixtures containing calcium chloride shall not be used, without approval of Consultant.

.8 Use same brands of materials and source of aggregate for entire project.

2.3 MORTAR MIXES

.1 Proprietary masonry mortars:

.1 Bedding mortar: Betomix Plus by Daubois, Type S or approved alternate.

.2 Pointing mortar: Restomix by Daubois, Type S or approved alternate.

.2 Pointing mortar to match the colour and texture of the existing mortar.

.1 Compressive strength at 28 days: not less than 2 MPa and 3.5 MPa at 7 and 28 days, respectively (50 mm cubes fog cured at 22°C).

.3 Grout: grout proportions by volume to A179, Table 3.

.1 Mix cementitious materials and aggregates in a mechanical batch mixer for a minimum of 5 minutes, and no more than 10 minutes, with an optimum amount of water to produce a sufficiently fluid mix that completely fills voids but does not exhibit excessive segregation or bleeding.

.2 Use and place grout before it has set, but not more than 1-1/2 hours after initial mixing.

.3 Coarse grout shall only be used where the least horizontal dimension is 50 mm, or more. Maximum coarse aggregate size shall be 10 mm.

.4 Minimum compressive strength at 28 day: 10 MPa for fine grout; 12.5 MPa for coarse grout.

.5 Slump: 200 mm, minimum, 250 mm maximum.

.4 Use same brands of materials and source of aggregate for entire project.

PART 3 – EXECUTION

3.1 EXAMINATION

.1 Inspect existing conditions upon which work of this Section is dependent. Report to the Consultant, in writing, any defects or discrepancies. Commencement of work implies acceptance of existing conditions and assuming full responsibility for the finished condition of the work.

.2 Prior to conducting the work, review with the Consultant to establish agreed repair/replacement quantities for unit rate work.

.3 Do not exceed the limits of the repair quantities that have been agreed upon, without written authorization from the Consultant or Owner. Repairs conducted in excess of agreed upon quantities will be at no additional cost to the Owner.

3.2 PREPARATION

.1 Protect all adjacent surfaces, systems, fixtures and components that may become damaged during work of this Section.

.2 Erect hoarding, and provide heating and ventilating as required.

.3 Provide all materials, equipment and labour as necessary to maintain the stability of the walls affected with the work from mobilization to demobilization.

.4 Provide shoring to the wall areas affected with the work as per the reviewed engineered shop drawings.

3.3 REMOVALS

.1 Verify locations and dimensions of areas of Work with Consultant.

.2 Remove masonry units as indicated in the drawings. Do not remove more than four (4) consecutive horizontal bricks at a time.

3.4 MASONRY INSTALLATION

.1 Carry out work in accordance with CSA Standard A371.

.2 Clean dust, brick fragments and other debris from opening.

.3 Dampen opening's surfaces before applying mortar.

.4 Examine the remaining walls, in the presence of the Consultant, and identify areas that require additional removal and/or other repairs. Inform Consultant of, and allow Consultant to review, any unusual or deteriorated construction revealed during the Work.

.5 Build masonry plumb, level, and true to line, with vertical and horizontal joints in alignment with existing conditions.

.1 Bond: running throughout except for decorative featuring to match existing.

.2 Coursing height: to match existing.

.6 Layout coursing and bond to duplicate existing facades, achieve correct coursing heights, and achieve continuity of bond above and below openings, with minimum of cutting.

.7 Do not field cut, bend or displace connectors or ties for placement of conduit, piping, outlet boxes, inserts and other items cast in except where indicated on Drawings or authorized by the Consultant.

.8 Cut exposed masonry units with power driven masonry saw only. Ragged or chipped edges will not be permitted.

.9 Coordinate with other trades to avoid cutting and patching. Cooperate in setting and aligning built-in items. Build in conduit and piping so that they are not exposed. Do not break masonry bond to accommodate concealed built-in items.

3.5 LAYING AND WORKMANSHIP

.1 Install each masonry unit with full mortar coverage on all adjoining ends, backs, and bearing surfaces, to provided completely solid bed joints, head joints and collar joints. Mortar shall not be slushed into joints between units after laying.

.2 Except in cold weather, wet clay bricks and blocks having an initial rate of absorption exceeding 30 g/min • 194 cm² (30 g/min. • 30 in.²). Wet to a uniform degree of saturation, 3 to 24 hours before laying, and do not lay until surface is dry.

.3 Wet tops of walls built of bricks and blocks qualifying for wetting, when recommencing work on such walls.

.4 Mix units within each pallet and with other pallets to ensure a uniform blend of colour and texture.

3.6 BUILT-IN WORK

.1 Build in miscellaneous supply and lay-out items such as bearing plates, loose angles, bolts, anchors, inserts, sleeves and conduits. Supply and lay-out of these items.

.2 Bed anchors of frames in mortar and fill frame voids with mortar all around as wall is erected.

.3 Fit masonry closely against electrical and plumbing outlets so that collars, plates, and covers will overlap and conceal all cuts.

.4 Cooperate and check with all other trades for materials to be built into masonry and the exact location of openings that will be required. Provide cutting and fitting of masonry required for incorporation of such items during the progress of masonry work only.

3.7 JOINTING

.1 Finish exposed joints to match existing work. All exposed joints shall be flush and tooled concave.

.2 Allow joints to set just enough to remove excess water, then tool with round jointer to provide concave, smooth, compressed, uniform joints to match existing on both sides of walls, where accessible.

3.8 MORTAR MIXING

.1 Soak processed lime in water for not less than 24 hours or soak hydrated lime in water for not less than 12 hours.

.2 Prepare mortar by:

.1 Mixing lime, cement, sand and water in specified proportions

.2 Add mixture as per manufacturers' instructions.

.3 Mix mortar ingredients in quantities for use in 2 hours.

.4 Use manual mixing as long as quantities of materials and water are accurately controlled and the method of mixing is approved by Consultant.

.5 Operate power driven mixer when fully charged, for minimum of 3 minutes and maximum of 10 minutes, with an optimum amount of water to produce a workable consistency.

.6 Add water slowly while mixing until all lumps are eliminated.

.7 Mix to a consistency of soft mush to produce desired workability.

.8 Incorporate colour additives into mixes in accordance with manufacturer's instructions. Mortar to match the color and texture of the original existing mortar as closely as possible.

.1 Portland cement shall consist of a mixture of white and gray cement in order to obtain a color match to the existing

.2 Select aggregates to produce mortar matching the existing.

.9 Use separate, clean mixer for coloured mortar.

3.9 LATERAL SECUREMENT

.1 Provide lateral securement where indicated in the drawings and as required by the Ontario Building Code.

3.10 FIELD QUALITY CONTROL

.1 Follow proper batching procedures of CSA Standard A179.

.2 Use gauged batching box of unit volume or other suitable means.

.3 Monitor mixing time.

.4 Provide samples for testing in accordance with CSA Standard A179.

3.11 TOLERANCES

.1 Tolerances in notes to Clause 5.3 of CSA Standard A371 shall apply.

.2 Deviation in joint thickness shall not exceed ± 3 mm.

3.12 CLEANING

.1 Daily, as the work proceeds, and upon completion, remove from the job site all surplus materials, rubbish and debris resulting from work of this Section.

.2 Remove mortar droppings, stains and other foreign material from affected surfaces.

END OF SECTION 04 30 00

1 GENERAL

1.1 INSTRUCTIONS

1.1.1 Comply with the Instructions to Bidders, the General Conditions, the Supplementary Conditions and the General Requirements of Division 01.

1.1.2 Report in writing to the Construction Manager any defects of surfaces or work prepared by other Sections which affect the quality or dimensions of the Work. Commencement of work implies acceptance of existing conditions and work by others.

1.2 DESCRIPTION

1.2.1 This Section of the specification includes requirements for sheet applied self-adhering membranes as flashings, underlayments or transitions.

1.3 ENVIRONMENTAL CONDITIONS

1.3.1 Store, handle, mix, apply and cure materials in accordance with the applicable manufacturer's specifications.

1.3.2 Do not apply membranes or primers when ambient temperature is below 5°C unless specifically approved by the manufacturer.

1.3.3 The moisture content of porous substrates shall be recorded at the time of application and shall be acceptable to the Consultant and manufacturer for the materials applied. Non-porous substrates shall be surface-dry.

1.4 INSPECTION AND TESTING

1.4.1 All Work of this section shall be subject to inspection and testing by the Consultant and/or testing agency. Repair all cut tests at no extra cost.

1.4.2 It is the Contractor's responsibility to advise the Consultant prior to commencement or re-starts and completion of Work.

1.5 CONTRACTOR QUALIFICATIONS

1.5.1 Contractor shall have prior experience with the installation of the membrane system and maintain contact with the manufacturer's technical representatives regarding up-to-date information about the products.

2 PRODUCTS AND MATERIALS

2.1 MEMBRANES

2.1.1 The entire system including membranes, primers, termination sealants, mechanical securement and/or other accessories shall be made by, furnished by or approved in writing by a single manufacturer.

2.1.2 Membrane consists of a sheet of isolation film coated on one side with a factory applied rubberized asphalt (or butyl) to a controlled, total thickness of 40mils (0.04inches/1.0mm), after which, a removable protective release paper is attached to the adhesive surface until the membrane is ready for use.

2.1.3 Through-Wall Flashings (in masonry or insulated assemblies):

Manufacturer	Product
Soprema	Sopraseal WFM
Henry Bakor	Blueskin TWF
W.R. Meadows	Air Shield Thru-Wall Flashing
Tremco	Exo-Air TWF

2.1.4 Subsill and window transition air/vapour barrier membranes:

Manufacturer	Product
Henry Bakor	FortiFlash® Butyl Flashing Membrane (30mils)
Tremco	Exo-Air 110AT
Equivalent self-adhesive, primer less membrane system suitable for high temperature service directly under sheet metal in all geographic areas. Subject to approval of the Consultant.	

2.2 TERMINATION SEALANTS

2.2.1 As approved by membrane manufacturer.

2.3 LIQUID FLASHING MEMBRANES

2.3.1 Liquid applied flashing membranes may be approved for localized installation where installation of sheet membranes is impractical. Liquid membranes must be from the same manufacturer and be approved for use as a part of the total membrane system. All liquid membranes systems will be reinforced at moving joints.

2.4 PRIMER

2.4.1 As approved by membrane manufacturer.

3 EXECUTION

3.1 STORAGE OF MATERIALS

3.1.1 Store all materials for membrane waterproofing work in strict accordance with the manufacturer's recommendations.

3.1.2 Store membrane on sleepers 100mm above surfaces where water may accumulate. Provide cover on top and all sides, allowing for adequate ventilation.

3.1.3 Primer, mastic, protection board adhesive and liquid membrane should be stored in a dry area away from high heat, flames or spark.

3.1.4 Store protection board flat, on a wood platform, and covered by tarpaulin.

3.2 SURFACE PREPARATION

3.2.1 Inspect all surfaces to be waterproofed for compliance with the manufacturers accepted surface conditions. Check for surface stability and contaminants.

3.2.2 Complete a full-system bond test (primer and membrane) at each substrate type. Follow manufacturer's recommendations where available.

3.2.3 Substrates should be smooth, free of voids, spalled areas, loose aggregate, and sharp protrusions, with no coarse aggregate visible.

3.2.4 Remove concrete fins, projections, concrete splatter, general surface dirt and other foreign materials. Clean surfaces with high pressure air to remove dust, loose stones, and debris.

3.2.5 Follow manufacturer's recommendations for minimum cure period required for new concrete prior to applying materials.

3.3 INSTALLATION

3.3.1 Temperature

1. Membrane shall be applied in fair weather (no rain in forecast) when air and surface temperatures are above 5°C.

3.3.2 Priming:

1. Prime all surfaces at a coverage rate specified by the manufacturer.
2. Allow primer to dry in accordance with the printed instructions (usually until tack free). Prime only the area which is expected to be covered with membrane in a working day. Reprime any areas not covered with membrane in 24 hours.
3. Do not apply primers to carrier-sheet facings at laps or joints unless specifically directed by the manufacturer.

3.3.3 Install membrane to prepared and primed surfaces in accordance with the manufacturer's printed installation instructions.

3.3.4 Installed membranes shall be rolled with a seam/flooring roller on all accessible surfaces. In confined spaces where rolling is not practical, all surfaces shall be pressed in with a blunt-edged spatula or wooden tooling slick to ensure intimate contact and to remove air pockets or blisters. Hand pressure alone shall not be considered satisfactory.

3.3.5 Sealing Edges

1. All terminations must be finished with a tooled bead of elastomeric termination mastic/sealant.
2. Install termination bars and elastomeric termination mastic/sealant unless specified otherwise in the project details. Verify glazing tape is compressed to design face clearance include in manufacturer's written instructions.

3.3.6 Sealing Seams

1. For all applications, all seams must be overlapped at least 65mm. Apply succeeding sheet with a minimum 65mm overlap and roll the entire membrane firmly and completely as soon as possible.
2. All fishmouths must be slit and the flaps overlapped, repaired with a patch, pressed or rolled to make the seal, and edges of the patch sealed with a trowelled bead of Elastomeric Mastic.
3. Misaligned or inadequately lapped seams must be patched with Membrane.

END OF SECTION

1 GENERAL

1.1 DESCRIPTION

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

1.2 REFERENCE STANDARDS

1.2.1 ASTM INTERNATIONAL

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

1.3 QUALIFICATIONS

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

1.4 INSPECTIONS AND TESTING

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

2 PRODUCTS

2.1 MATERIALS

2.1.1 General

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

Table 1 – Colour Matching Requirements

Substrate	Requirement	Comment
Window frame to brick masonry interfaces	Match the new window frame surface to be caulked	
Window frame to interior finishes	Match the new window frame, interior wall colour, or sill colour surface to be caulked	Colours to be reviewed and approved by Client.

2.1.2 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.

2.1.3 Exterior & 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

2.1.4 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. Bondbreaker 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 Batts
Substitutions	Consideration will be given to proposed substitutions

2.1.5 Sealant

1. 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

2.1.6 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.

3 EXECUTION

3.1 GENERAL

3.1.1 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

3.2.1 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.

3.2.2 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

3.3.1 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.

3.3.2 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.

3.3.3 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 ½ 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, application of sealant in several passes may be required (dependent on joint configuration, weather conditions, access and material type). Follow Manufacturer's written instructions for maximum joint width and application methods.

3.3.4 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. Ensure existing drainage holes provided for wall systems are not blocked by sealant material.
4. 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.

3.3.5 Cleaning

1. Remove sealant smears and droppings on completion of sealant installation in affected areas.
    1. 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.
    2. 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.
2. Remove masking tape immediately after tooling of joints.
3. Cleaning solutions and methods per Manufacturer's written instructions.

END OF SECTION

1 GENERAL

1.1 DESCRIPTION

1.1.1 This section governs removal of existing windows and supply and installation of new thermally broken, pre-finished aluminum framed windows and curtain wall.

1.2 REFERENCE STANDARDS

1.2.1 Conform to the latest edition of the following:

1. American Architectural Manufacturers Association (AAMA):
    1. AAMA/WDMA/CSA 101/I.S.2/A440, NAFS, “North American Fenestration Standard”.
    2. AAMA 2605, “Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels”.
    3. AAMA 611, “Voluntary Specification for Anodized Architectural Aluminum”.
2. American Society for Testing and Materials “ASTM International” (ASTM)
    1. ASTM E331, “Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.”
3. Canadian Standards Association “CSA Group” (CSA)
    1. CSA-A440S1, “Canadian Supplement to NAFS”.
    2. CSA-A440.2/A440.3 “Fenestration Energy Performance / User Guide to CSA A440.2”.
4. Insulating Glass Manufacturer Alliance (IGMA), “Glazing Recommendations for Sealed Insulating Glass Units”.
5. Standards Council of Canada
    1. CAN3-S157-M, “Strength Design in Aluminum”.

1.3 DESIGN AND PERFORMANCE REQUIREMENTS

1.3.1 Design window systems to withstand, without detrimental effects to appearance and performance, wind loads, and temperature ranges expected in work geographical area. Unless otherwise specified, base design on local Building Code requirements. For calculation of internal pressures, use gust effect factor for a Category 2 Building as described in commentary on wind loads in structural commentaries on National Building Code of Canada.

1.3.2 Meet the following minimum performance levels as described in NAFS and CSA-A440S1:

1. Overall Performance Class and Grade:
    1. Fixed, Awning and Hopper Operable Windows: Class CW – PG1680 (metric), Class CW – PG35 (imperial).

1.3.3 Air and Water Leakage, and Wind Load Resistance Test Requirements:

Minimum Performance Levels	Fixed Window	Operable Window
	CSA-A440	
Air Leakage Resistance	Fixed	A3
Water Leakage Resistance	730 Pa	730 Pa
Design Wind Pressure	1680 Pa (35 psf)	1680 Pa (35 psf)

1.3.4 Additional Window Requirements:

1. Thermal Performance (Total Window U-value): U-2.8 W/ K·m2 (U-0.5 Btu/ h·ft2·°F)
2. Condensation Resistance: I 60
3. Ease of Operation: Pass
4. Blocked Operation: Pass
5. Forced Entry Resistance: Grade 10

1.3.5 Use rain screen and pressure equalized windows:

1. glazing pockets and spandrel cavities to be vented and drained to the exterior.
2. gaskets, corner blocks, baffles, overlaps and seals as required to provide a “rain screen” barrier to effectively deter rain entry into cavities of the system.
3. necessary air seals to minimize air passage from the system cavities into the building and vice versa, to assure adequate pressure moderation of the system cavities with the outside.
4. air and vapour seals required to minimize vapour exfiltration from the building into the system cavities.
5. openings between these cavities and the outside must be of sufficient cross section to provide pressure moderation. All openings must be effectively baffled or otherwise guarded to minimize water entry.

1.3.6 Deflection Limitations

1. Maximum Component Deflection: 1/175 of span or less if required by insulating glass manufacturer’s written instructions.
2. Maximum Horizontal Framing Deflection: L/360 to a maximum of 3mm, unless otherwise stated in the specification.
    1. Deflection limits for horizontal framing in composite windows (such as fixed-over-slider) shall include permanent deflections caused by hammering during interior vinyl stop installation in addition to IGU weight.
    2. Placing setting blocks closer than 150mm from vertical framing to reduce deflections will not be accepted.
    3. Deflections which make removal of sash and/or its operation difficult or impossible will not be accepted.
    4. Windows with deflections greater than this amount will be rejected and replaced by Contractor at no cost to Owner.

3. If requested by Consultant, provide structural calculations to confirm deflection limitations.
4. Size framing to ensure proper compression of exterior glazing and provide a minimum face clearance of 3mm.
5. Size windows to fit within existing openings and without damaging interior finishes:
    1. Minimum clear gap around window perimeters to limit thermal bridging: 6mm.
    2. Maximum clear gap around window perimeters: 19mm.

1.3.7 Delivery Storage and Handling:

1. Identify all window components after fabrication by marks clearly indicating their location on building as shown on Drawings.
2. Store material in a location and in a manner to avoid damage. Stack in a way which will prevent bending, excessive pressure, abrasion of finishes surfaces and so that water cannot accumulate on or within materials.
3. Contractor will be allowed to store equipment and materials on site (not within school building) 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.

1.4 QUALIFICATIONS

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

1.5 DELIVERY, STORAGE AND HANDLING

1.5.1 Store units at site on raised wood pallets protected from the elements and corrosive materials. Do not remove from crates or other protective covering until ready for installation.

1.5.2 Store prefabricated frame assemblies blocked off the ground in an approved manner to prevent warping, twisting, undue strain on assembly or physical abuse and damage.

1.5.3 Store windows, frames, and insulating glass units vertically, in a clean, dry, secured and protected area with a positive bottom support at right angles to the plane of the glass.

1.5.4 Match mark all components for field assembly.

1.6 MOCK-UPS

1.6.1 Minimum of one mock-up of each window type, assembly is to include all relevant perimeter seals in all the openings. Mock up to include roof, soffit, and wall interfaces (if applicable).

1.6.2 Construct a mock-up on site of a typical window for review by Consultant, prior to commencement of installation work.

1.7 INSPECTIONS AND TESTING

1.7.1 Consultant may visit window manufacturer’s facility during manufacturing to examine assembly and materials.

1.7.2 Consultant may undertake random on-site testing to check air and water leakage resistance.

2 PRODUCTS

2.1 MATERIALS

2.1.1 Use materials that are corrosion resistant, non-staining, nonbleeding and compatible with adjoining materials for all window components.

1. Unless engineering calculations are provided or testing is performed to confirm that strength and deflection criteria can be met, aluminum frame sections (interior and exterior components) shall be AA 6063-T6 alloy and minimum 1/16" (1.6mm) thick.
2. Ensure all framing is thermally broken (once assembled).
3. Ensure all joints (joints in frame, joints in operable windows, etc.) are interlocking and designed to be air and water tight. All mechanical joints to be sealed with butyl pad tape or gunnable sealant (Tremco Small Joint Sealant or approved alternate) to prevent air and/or water infiltration. Sealant/butyl to be compatible and adhere with other internal seals.
4. Fasteners to be used in connecting the frame assembly shall be Type 300 or 400 series stainless steel.
5. Surfaces of aluminum components in contact with concrete and masonry to be coated with bituminous paint, conforming to CAN/CGSB-1.108-M, “Bituminous Solvent Type Paint”.

2.1.2 Approved Products:

Table 1 - Acceptable Aluminum Window Products

Manufacturer	
Sherwood Windows Ltd.	
Aluminium Window Designs Ltd.	
Alwind Industries Ltd.	
Windspec Inc.	
Alumicor Ltd.	
Alternates	Consideration will be given to proposed alternates that meet performance requirements specified

2.1.3 Aluminum Finish Requirements

Table 3 - Acceptable Products

Location	Finish
Exterior	anodized finish meeting AA-M12C22A31. Colour to match existing
Interior	anodized finish meeting AA-M12C22A31.Colour to match existing.
Substitutions	Consideration will be given to proposed substitutions.

2.1.4 Hardware

1. Hinges: Heavy Duty 4-Bar Hinges by Truth Hardware, with the following features:
    1. Two hinges per operable unit.
    2. Sized as per manufacturer's requirements for the project specific operable size.
    3. Made from 301 series stainless steel.
    4. Install metal bar restrictors to each hinge at jamb to allow maximum 225 mm opening (approximately 9"), with the exception of openings at locations where windows open out to walkways, and windows edges; these openings shall be limited to the exterior face of the cladding.
2. Handles: Solid white bronze, satin brushed cam handles, one or two per operable unit depending on unit size, as per manufacturer's requirements, as follows:
    1. Awning windows: Classic handle, Style no. 162 001 by Bronzecraft, or approved alternate manufacturer.
    2. Hopper windows: Classic handle, Style no. 156 001 by Bronzecraft, or approved alternate manufacturer.

2.1.5 Metal Spandrel In-Fill Sandwich Panels:

1. Design metal spandrel sandwich panels as follows:
    1. Minimum 1mm thick prefinished aluminum sheet exterior facer.
    2. Minimum 25mm thick rigid mineral wool insulation core (Roxul Comfortboard 110).
    3. Minimum 20 gauge galvanized sheet steel interior facer.
2. Laminate exterior and interior facers to insulation using compatible, non-water based adhesive.
3. If interior surface is exposed to view, use prefinished interior facer to match other interior trim/finishes.
4. Provide two-piece (aluminum and rubber gasket) stop around panel full perimeter. Size gasket and locate stop such that there is proper compression of exterior (glazing tape) seal. Gaskets to be EPDM, Neoprene or Silicone.
5. Use light-weight, resilient, inorganic fibrous batts such as Rockwool ComfortBatt for packing insulation into voids and wall cavities behind spandrel panels.

2.1.6 Spandrel – Metal Backpans

1. Design metal backpans as follows:
    1. Minimum 20-gauge galvanized sheet steel.
    2. Constructed with a “bird’s beak” perimeter detail to allow continuous sealant installation.
    3. Seal all screws within the back pan space.
    4. Minimum 125mm Rockwool CurtainRock to fill back pan space.
    5. Fully ventilated to the exterior.

2.1.7 Spandrel – Insulated Metal Panel Behind Glass

1. Design insulated metal spandrel panels as follows:
    1. Minimum 1mm thick prefinished aluminum sheet interior facer, to match adjacent trims and frames.
    2. Minimum 25mm thick rigid mineral wool insulation core (Roxul Comfortboard 110).
    3. Minimum 25mm thick spacer blocks around perimeter of panel to provide air space behind glass.
2. Laminate interior facer to insulation using compatible, non water-based adhesive.
3. Provide two-piece (aluminum and rubber gasket) stop around panel full perimeter. Size gasket and locate stop such that there is proper compression of exterior (glazing tape) seal. Gaskets to be EPDM, Neoprene or Silicone.

2.1.8 Aluminum Sill Upstand Angle

1. Prefinished extruded aluminum, formed and finished from same material as window frame. Sheet aluminum or sheet steel will not be accepted.

2.1.9 Sub-Sill Flashing Membrane

1. Have all sub-sill flashing membrane materials made by, or furnished by, or approved in writing by the manufacturer.
2. Membrane to be developed for adhesion without the use of the primer (i.e. “primer-less membrane). Membranes that require primers for all applications/conditions are not acceptable.
3. Use one of the flexible, self-adhered, sheet applied flashing membranes specified in 07130.

2.1.10 Shims

1. Comply with requirements of CAN/CSA A440.4. Acceptable materials:
    1. Neoprene, EPDM, or silicone with Durometer hardness of 40-60 Shore A.
    2. Cedar Shims complying with the requirements of CSA O118.1 or CSA O118.2. Use tapered shims that are minimum 50mm in width. Wood treated with copper based preservatives (ACA or CCA); plywood and/or OSB shims are not permitted.

2.1.11 Fasteners

Location	Material/Coating	Approved Products
Aluminum Frame Assembly	Type 300 or 400 Stainless Steel	N/A
Anchoring to Structure	Carbon Steel with Corrosion Resistant Coating	Climaseal by ITW Buildex Permaseal by Powers Rawl
Substitutions	Consideration will be given to proposed substitutions with equivalent performance to specified products.	

1. Ensure all fasteners are suitably coated/formulated to prevent corrosion or galvanic action.
2. Use socket pan head or hex washer head type screw fasteners, except where screws are installed through window frames (fixed and/or operable), where flat head may be used provided they are properly countersunk.

2.1.12 Sealants

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

2.1.13 Sheet Metal Trim and Flashings

1. Refer to Section 08 53 00 –Flashing and Trim.
2. Refer to Drawing A7.

2.2 FABRICATION – ALUMINUM FRAMED WINDOWS

2.2.1 Fabricate frames and windows to shapes, sizes and configurations in accordance with manufacturer's assembly details and reviewed shop drawings.

2.2.2 Build square, true, accurate to size, free from defects detrimental to appearance and performance.

2.2.3 Machine all joints, corners, mitres accurately to hairline joints. Corner of sash and window frames to be sealed with sealant material. Conceal mechanical fasteners in completed installation.

2.2.4 Interior stop must have recessed grooves or nibs to accommodate glazing gasket covers.

2.2.5 Interior stop must be one-piece corner to corner.

2.2.6 Run head and sill members through the vertical. Jamb members must butt against the head and sill piece and be effectively sealed to maintain air and water tightness.

2.2.7 In addition to requirements of NAFS and CSA-A440S1, comply with the following:

1. Assemble frames in a controlled, interior environment. Accurately machine, assemble and seal all joints to provide neat weathertight joints. As a minimum, for mechanical joints in drained window/door sill sections, seal their full width with a butyl pad or a bead of silicone sealant during assembly of door frame.

2. Foam tapes at mechanical joints will not be accepted as seals.
3. Measure every window to be replaced to obtain an accurate measurement.
4. Fabricate units square and true with a maximum tolerance of ±1.5mm for units with a diagonal measurement under 1800mm and ±3mm for units with a diagonal measurement over 1800mm.
5. Mechanical fasteners, welded components, flashings and hardware must not bridge the thermal breaks unless units tested for thermal performance and condensation resistance had the same thermal bridges.
6. Arrange fasteners and attachments to ensure they are all concealed from view.

3 EXECUTION

3.1 INSPECTION

3.1.1 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.

3.1.2 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.

3.2 PREPARATION

3.2.1 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.

3.2.2 Obtain all dimensions affecting the work of this section on the job site.

3.2.3 Provide data, dimensions and components, anchors and assemblies to be installed by others in proper time for installation.

3.3 REMOVAL OF EXISTING WINDOWS

3.3.1 Remove and dispose of existing windows (glass, frames and sill flashings), including all associated sealants. Take all precautions required (such as precutting glass and tapping) to prevent debris falling below.

3.3.2 Do not throw frames, glass and other debris out of windows onto the ground below. Collect debris in containers and remove them from building via building stairs and/or elevators.

3.3.3 Place all components (aluminum, glass, wood, etc.) from window removal into separate containers on site and delivered to a recognized and approved recycling facility. Submit supporting documents, such as way bills, as proof of compliance.

3.3.4 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.

3.4 PREPARATION OF ROUGH OPENING

3.4.1 Remove all debris from rough openings and surrounding surfaces by vacuuming clean.

3.4.2 Clean all surfaces to receive membrane with a solvent based cleaner and prime to promote membrane adhesion in strict accordance with the membrane manufacturer's installation instructions.

3.4.3 Install aluminum upstand angle on interior side of rough opening. Fasten as per approved shop drawings.

3.4.4 Install new sub-sill flashing membrane onto sill rough opening. Lap membrane onto face of exterior cladding, and up onto interior aluminum upstand angle. End dam membrane by upturning minimum 100mm onto vertical jamb surfaces and 25mm onto interior aluminum upstand angle.

3.5 INSTALLATION AND SECUREMENT

3.5.1 Install new windows in existing openings with frames plumb, true, level, with frames square, free from warp, twist and superimposed loads.

3.5.2 Install anchors as per approved shop drawings. At all anchoring locations, install shims to tightly fill space/gap without bending frames. Use a minimum two shims per location, driven from opposite sides of window frame to provide level support for the full width of the frame. Prior to sealant application, cut off shims flush with interior and exterior face of frames.

3.5.3 Design jambs of adjoining windows and adjoining windows and doors, to couple together (male/female coupling). Provide minimum of 19mm engagement at each male/female connection. If required, provide additional lateral support by securing window and door frames through the glazing cavity. At each male/female connection, install a bedding bead of sealant on the interior and exterior sides of the joint prior to coupling the mullions. Wipe off any excess sealant before it cures.

3.5.4 Do not install fasteners through the sill or other drainage planes unless approved by Consultant. If required and approved by Consultant, wrap shank of the fastener immediately below the head with unshimmed butyl tape prior to installation.

3.5.5 Install interior and exterior sealants in accordance with Section 07 92 00.

3.6 PREPARATION OF FRAMING FOR GLAZING INSTALLATION

3.6.1 Prior to IGU and spandrel panel installation, seal all joints, openings, etc., in the work area in accordance with Section 07 92 00 - Elastomeric Joint Sealants. This includes, but is not limited to:

1. sealing of mechanical joints behind corner block, and sealing of the corner block at head/jamb and sill/jamb locations between the spandrel and the vision area, and between the vision area and spandrel panel located immediately below work area;
2. sealing of joints between metal back-pan and aluminum mullion (perimeter of back pan to mullion, screw heads);
3. sealing of penetrations through metal back-pan and aluminum mullion (if any);
4. corner toe beads at each head/jamb and sill/jamb locations of the IGU;
5. sealing of expansion and/or stack joints as required and recommended by manufacturer; and
6. sealing butt joints in pressure plates prior to installation of cover caps.

3.6.2 Corner Plug Installation

1. Seal the butt joint between the vertical and horizontal mullion with sealant. Place sealant around the back and sides of corner plug prior to installation in between the vertical and horizontal mullions.
2. Complete the installation by “buttering “the entire surface of the corner block and marrying with the corner toe bead. Tool sealant as to maintain a drainage path of vertical glazing pocket. Once installed, the corner plug must be in contact with the back (interior side) of the pressure plate.

3.7 PERIMETER INSULATION, SEALANTS, AND TRIM

3.7.1 Cap exterior sill with new prefinished metal flashing per Section 08 53 00. Install cedar shim blocking or continuous strips of pre-shimmed glazing tape (in direction of water drainage) as required to provide a minimum 3mm drainage clearance between self-adhered membrane and metal flashing. Extend metal flashing a maximum 25mm under window frame. Mechanically anchor metal flashing per shop drawings. All fasteners to be concealed.

Contractor to review site conditions and is to notify consultant and PDSB if deviations to the prescribed installation methods and design are required.

3.7.2 Completely fill void around frame perimeters with spray foam. Limit quantity of foam as recommended by product manufacturer to provide sufficient room for expansion.

3.7.3 Cut away foam exuding from joints prior to applying sealants.

3.7.4 Install interior and exterior sealants in accordance with Section 07 92 00 and project drawings. Cap off large joints and gaps between window frame and rough opening with new prefinished trim as required.

3.8 CLEANING AND ADJUSTMENT

3.8.1 Remove protective elements and labels from glass and frames, and thoroughly clean all aluminum 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.

3.8.2 Clean out sill track and drainage paths.

END OF SECTION

1 GENERAL

1.1 DESCRIPTION

1.1.1 This section specifies the requirements for the supply of new aluminum panning/trim and column covers (where applicable).

1.1.2 The work is to be performed in accordance with the drawings.

1.2 REFERENCE STANDARDS

1.2.1 ASTM A525-81, “General Requirements for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process”.

1.2.2 CGSB 1-GP-108M, "Paint, Acid and Alkali Resistant, Black".

1.2.3 AAMA No. 605.2-1980, Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.

1.2.4 AAMA No. 603.8-1980, Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.

2 PRODUCTS

2.1 MATERIALS

2.1.1 Exterior aluminum flashing: extruded aluminum, 1.6 mm thick (0.062 inches), with an anodized finish to match the new window frames.

2.1.2 Aluminum flashing shall be designed to lock into the new window frames and have true flat planes with no twists, buckles, dents or other similar visual defects caused by defective materials or careless handling.

2.1.3 Interior aluminum trim: extruded aluminum, 1.6 mm thick (0.062 inches), with an anodized finish to match the new window frames.

2.1.4 Aluminum trim shall cover any remaining window framing and exposed spaces around the interior rough opening and onto adjacent materials beside the windows.

2.1.5 Where applicable, additional panning and column covers are required to match the pre-existing conditions at the exterior and interior rough opening. Aluminum trim/panning shall cover any remaining window framing and exposed spaces around the interior or exterior rough opening and onto adjacent materials besides the panning and or windows.

2.1.6 Nails, screws, fasteners and accessories to be stain and corrosion resistant stainless steel to ASTM E-149.

END OF SECTION

1 GENERAL

1.1 DESCRIPTION

1.1.1 This section specifies the fabrication, supply and installation of double pane insulating glass units (IGUs).

1.2 ENVIRONMENTAL CONDITIONS

1.2.1 Work shall not proceed if weather at time of installation, or if immediate forecast, is for weather which may result in damage to exposed wall elements or interior finishes and furnishings of building.

1.2.2 Do not carry out glazing installation at temperatures below 5°C. Should it become necessary to carry out Work at temperatures below 5°C, inform Consultant and consult glazing sealant manufacturer's representative. Proceed on their written instructions only.

1.3 INSPECTION AND TESTING

1.3.1 Consultant may visit IGU manufacturer’s facility during manufacturing to examine assembly and materials. Promptly correct any deviations noted from approved shop drawings and from descriptions in the IGMA certificate at no cost to Owner.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

1.4.1 Design glazing to withstand, without any detrimental effects to appearance and performance, wind loads and temperature range expected in accordance with local Codes.

1.4.2 Select glass pane thickness and width of spacer to provide overall, nominal IGU thickness of 25mm (1").

1.4.3 Size glazing unit to provide a minimum edge clearance between edge of unit and window frame in accordance with IGMA recommendations.

1.5 REFERENCE STANDARDS

1.5.1 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
    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”

1.6 QUALITY ASSURANCE

1.6.1 Provide IGUs manufactured by an Insulating Glass Manufacturer Alliance (IGMA) certified member.

1.6.2 Provide notice for Consultant and/or Owner to review IGUs prior to installation.

1.6.3 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.

1.6.4 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.

1.6.5 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.

2 PRODUCTS

2.1 MATERIALS

2.1.1 Glass

1. Vertical Vision Glass

Location	Lite	Thickness	Type	Glass Colour	Coating
W01, W02, W03, W03A, W03B, W04, W05, W06, W07, W08, W09, W10, W12. W13, W14	Outboard	6mm	Heat Soaked, Tempered	Clear	Low-E on 2
W01, W02, W03, W03A, W03B, W04, W05, W06, W07, W08, W09, W10, W12. W13, W14	Inboard	6mm	Heat Soaked, Tempered	Clear	None

2. Sloped Glazing Vision Glass

Location	Lite	Thickness	Type	Glass Colour	Coating
N/A	Outboard	6mm	Heat Soaked, Tempered	Light Blue Tint	Low-E on 2
N/A	Inboard	12mm	Heat Soaked, Tempered, Laminated	Clear	None

3. Privacy Glass

Location	Lite	Thickness	Type	Glass Colour	Surface Treatment
N/A	Outboard	6mm	Heat Soaked, Tempered	Clear	Sandblasting on #2
N/A	Inboard	6mm	Heat Soaked, Tempered	Clear	None

4. Spandrel Glass

Location	Lite	Thickness	Type	Glass Colour	Coating
N/A	N/A	6mm	Heat Soaked, Tempered	Clear	Silcone Coating on #2 – Light White

2.2 FIRE RATED GLASS

2.2.1 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 IGUs:

Location	Lite	Thickness	Type	Glass Colour	Coating
W11	Outboard	6mm	Heat Soaked, Tempered	Clear	Low-E on 2
W11	Inboard	7.9mm	Fire-rated, impact safety-rated glass ceramic	Clear	None
Sealants, spacers, desiccants, and all other IGU components used in the production of fire rated IGUs are to be in accordance with the fire rated glass manufacturer's requirements/tested assemblies.					

2.3 INSULATING GLASS UNITS

2.3.1 Acceptable IGU manufacturers include:

1. Trulite
2. Prelco
3. Cardinal
4. SAAND
5. Oldcastle

2.3.2 Identify IGUs as required by the IGMA Certification Program with the IGMA trademark, company name, location of production facility, and year of manufacture.

2.3.3 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.

2.3.4 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.

2.3.5 IGU Inert Gas Fill

1. Use argon gas, minimum 90% concentration, to meet minimum requirement of CAN/CGBS-12.8, "Insulating Glass Units".

2.4 COATINGS

2.4.1 Low-E Coating

1. Sputtered type, such as:

Manufacturer	Product
Vitro Architectural Glass	Solarban 70XL
Cardinal	LoE²-366
AGC Glass	Energy Select 28
Alternates	Consideration will be given to proposed alternates

2.4.2 Spandrel Coating

1. Use a silicone coating such as:

Manufacturer	Product
ICD High Performance Coatings	Opaci-Coat-300
Alternates	Consideration will be given to proposed alternates

2.5 GLAZING COMPONENTS

2.5.1 Interior Removable Stops

1. Aluminum removable interior stop designed to accept a roll in rubber gasket type to provide suitable compression onto glass.
2. Ensure glazing stops do not extend beneath IGU edges (such as shovel foot type interior stop).
3. Heel bead shall not impede the removal of glazing stops. Consultant will randomly inspect this throughout the entire project.

2.5.2 Glazing Tapes and Gaskets

1. For wet seal between IGU and window 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 IGUs and aluminum 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.

2.5.3 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

1. 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	

1. 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	

2.5.4 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 IGU width (both inboard and outboard panes). 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.

3 EXECUTION

3.1 TEMPERING

3.1.1 Perform tempering using horizontal tongue-free method.

3.2 ASSEMBLY OF INSULATING GLASS UNITS (IGUs)

3.2.1 Fill spacer cavities with desiccant in accordance with desiccant manufacturer’s written instructions and immediately assemble spacer frame.

3.2.2 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.

3.2.3 Ensure bond lines on spacer and glass are free of debris, fingerprints or other substances which may adversely affect the bond.

3.2.4 If required, edge delete coatings as per manufacturer’s written instructions and IGMA certification.

3.2.5 After cleaning, place spacer frame with all sides parallel to edges of glass. Ensure all sides of frame are equal dimension from glass edges.

3.2.6 Apply sufficient PIB around entire spacer frame assembly perimeter on both sides of the spacer to achieve complete PIB wet out onto glass surfaces.

3.2.7 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±1mm 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.

3.2.8 Proceed with gas fill operation. Once filling procedures are complete, mechanically close injection port and cover/seal with a layer of PIB.

3.2.9 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±1mm thick as measured from glass edges.

3.2.10 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

3.3.1 Verify IGUs are correctly sized for the intended openings and glass edges are free from nicks and other imperfections conducive to breakage.

3.3.2 Verify minimum required face and edge clearances will be achieved.

3.3.3 Notify Consultant of conditions which prevent proper installation.

3.4 IGU INSTALLATION

3.4.1 Preparation:

1. Verify surfaces to receive glazing are undamaged, free of obstructions and ready for preparation.
2. Remove all protective coatings from window 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.

3.4.2 Glazing Tape Application:

1. Apply tape flush to outside edge of fixed window 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.

3.4.3 Setting Block Placement:

1. Place each setting block at quarter points, but no closer than 150mm from IGU corners.

3.4.4 IGU Placement

1. Clean IGU face with a clean white cloth saturated with solvent using the 2-rag method.

2. Install IGU centred in frame opening and resting on both setting blocks. Maintain minimum edge clearance of 3mm (1/8"). Ensure full contact of both outer and inner panes of glass on setting blocks.
3. Press IGU firmly against glazing tape. Take care to avoid displacing glazing tape during IGU installation.
4. Locate IGU within opening to provide minimum face clearances as recommended by IGMA.
5. Install a heel bead of silicone sealant around full IGU perimeter.
6. Install interior glazing stops and/or exterior pressure plates immediately following IGU placement. Tightly fit butt joints between stops. During installation, support any intermediate horizontal framing members against the downward force of hammering during stop installation.
7. Verify glazing tape is compressed to design face clearance include in manufacturer's written instructions.
8. Fill depressions in glazing tape at sill with silicone sealant.

3.4.5 Interior Glazed Windows

1. Install a heel bead of silicone sealant around full IGU perimeter.
2. Install interior glazing stops and/or exterior pressure plates immediately following IGU placement. Tightly fit butt joints between stops. During installation, support any intermediate horizontal framing members against the downward force of hammering during stop installation.
3. Verify glazing tape is compressed to design face clearance include in manufacturer's written instructions.
4. Fill depressions in glazing tape at sill with silicone sealant.

3.4.6 Exterior Glazed Curtain Wall

1. Install temporary retainers (i.e. "dutchman" or "cheater") in sufficient number and size required to retain and secure IGUs and/or spandrel panels in the opening until ready for the installation of continuous pressure plates/cover caps around each opening.
2. Verify that drainage of vertical to horizontal glazing pocket is not impeded at the corners for both the IGU's and spandrel panels. Drainage path shall be maintained fee of debris and obstruction. At the sill of each opening:
    1. There should be a minimum of three weep holes per opening (one hole on each side of the setting blocks, one hole in the middle) in the pressure plate. Minimum dimensions for each weep hole shall be 1/4" x 1" (6mm x 25mm).
    2. There should be a minimum of 2 x 1/4" (6mm) Ø drain holes in underside of cover caps. The location of the drainage holes should be offset in relationship to the pressure plate weep holes.
3. Installation of Pressure Plates/Cover Caps
    1. Install new rubber gasket in pressure plate race. Do not stretch gasket during installation. Cut gasket about ½" longer than pressure plate. Allow gasket to relax for a minimum of 24 hours . Prior to installation, cut gasket about 1/16" (1.5mm) longer than edge of pressure plate at both ends.
    2. Remove temporary retainers and install pressure plates with new fasteners. Once the pressure plates are installed, the top of the gasket should be parallelled with edges of the pressure plate (i.e. no depression).

3. Seal all butt joints at pressure plates. Install cover caps. Verify that sufficient allowance is provided for thermal movement of cover caps.

3.5 CLEANING AND ADJUSTMENT

3.5.1 Remove protective elements and labels from glass and thoroughly clean aluminum 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.

3.5.2 Check fit of all movable sashes and operation of all hardware and adjust as required to restore proper operation.

END OF SECTION

APPENDIX A

DESIGNATED SUBSTANCE AUDIT REPORT
(MTE File 55339-100)

Fairwind Senior Public School - Exterior Window Replacement

Designated Substance Audit Report

Project Location:
5235 Fairwind Drive, Mississauga, ON

Prepared for:
Peel District School Board
933 Central Parkway West
Mississauga, ON L5C 2T9

Prepared by:
MTE Consultants Inc.
1016 Sutton Drive, Unit A
Burlington, ON L7L 6B8

June 12, 2024

MTE File No.: 55339-100

Engineers, Scientists, Surveyors.

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1.0 INTRODUCTION

1.1 Authorization

MTE Consultants Inc. (MTE) was retained by the Peel District School Board (PDSB) to conduct a Designated Substance Audit for Fairwind Senior Public School located at 5235 Fairwind Drive in Mississauga, Ontario.

The purpose of the audit was to identify the presence of Designated Substances within the building in accordance with Section 30 of the Occupational Health & Safety Act (OHSA), in advance of a window replacement project. This report meets the requirements of Section 30 of the OHSA and the requirements of Ontario Regulation (O. Reg.) 278/05.

2.0 SCOPE OF WORK

As requested by the Client, this assessment was limited to the exterior windows throughout the building. These areas are referred to in the following sections as the "Subject Areas".

The Scope of Work for this assessment was completed by MTE and included the following activities:

- Review of existing or historical reports and documentation pertaining to Designated Substances within the buildings;
- Visual inspection of accessible locations within the Subject Areas to identify the following suspect Designated Substances and Hazardous Building Materials:
  - Asbestos;
  - Lead;
  - Mercury;
  - Silica;
  - Mould growth;
  - Ozone Depleting Substances; and,
  - Polychlorinated Biphenyls limited to fluorescent light ballasts/sealants;
- The following Designated Substances are not expected to be present due to the building use or in a form that is hazardous: Acrylonitrile, Arsenic, Benzene, Coke Oven Emissions, Ethylene Oxide, Isocyanates, and Vinyl Chloride;
- Collection of bulk building material samples suspected to contain asbestos;
- Collection of sealant samples to determine Polychlorinated Biphenyl (PCB) content;
- Submission of samples to an accredited and/or qualified laboratory;
- Interpretation of laboratory results; and,
- Preparation of this report of findings and recommendations.

3.0 METHODOLOGY AND ASSESSMENT CRITERIA

This audit was conducted using visual and laboratory identification methods for the assessment of materials outlined in Section 2.0 and their corresponding location and use. Materials that are determined to be asbestos-containing materials (ACM) are further classified by their friability and condition. The areas outlined in Section 2.0 were inspected and limited to building components, materials and service connections. Notwithstanding that reasonable attempts

were made to identify all Designated Substances, the possibility of concealed substances and material exists and may not become visible until substantial demolition has occurred and therefore are currently undocumented. All work was conducted in accordance with industry accepted methods and MTE Standard Operating Procedures and did not include the following:

- Materials indicated in this report as “Potentially Concealed”;
- Locations that may be hazardous to the surveyor (located at heights, electrical equipment, confined spaces);
- Where invasive inspection could cause consequential damage to the property or impair the integrity of the equipment, such as roof system, sealants, exterior finishes, underground services or components of mechanical equipment;
- Locations concealed by building finishes that require substantial demolition or removal for access or determination of quantities (plumbing or electrical lines);
- Non-permanent items or personal contents, furnishings; and,
- Settled dust or airborne agents unless otherwise stated.

4.0 ASSESSMENT AND RESULTS

An inspection of the building was conducted by MTE on May 21, 2024.

The proposed project is a window replacement and is expected to disturb exterior windows and associated frames and sealants.

A description of the building and assessed finishes is provided below. Refer to Section 4.1 for a summary of findings.

Building Element	Description
Exterior Finishes	Concrete Brick veneer and mortar Sealants
Building Structure	Structural steel Concrete Concrete block
Building Insulations	Not inspected
Mechanical Systems/Insulations	Not inspected
Electrical/Plumbing Systems	Not inspected
Floor Finishes	Not inspected
Wall Finishes	Concrete block
Ceiling Finishes	Not inspected

4.1 Findings and Analytical Results

A summary of sampling locations and analytical results are included in **Appendix A**.

Laboratory certificates of analysis are included in **Appendix B**.

Figures of inspected areas are included in **Appendix C**.

A photographic log is provided in **Appendix D**.

A detailed summary of findings and recommended actions is provided in **Table 4.3 of Appendix A.**

4.1.1 Asbestos

Asbestos was used in building materials throughout the years with a peak usage in the 1950s and 1960s. While the manufacture of most ACM was banned in the 1970s, buildings constructed in the 1980s have the potential for ACM as well. In 1986, legislation limiting the use of asbestos in consumer products was introduced.

As part of this inspection, a total of 6 bulk samples of suspect ACM were submitted for asbestos analysis with a total of 6 analyses being performed. Any differences between the number of samples submitted and the number of samples analysed can be a function of either the stop-positive method or the requirement of analyzing multiple layers, performed by the laboratory, from a single sample reported as additional samples or subsets of a sample.

Bulk samples were submitted to Paracel Laboratories Ltd. (Paracel) in Mississauga, Ontario for asbestos analysis. Paracel is certified under the Canadian Association of Laboratory Accreditation to perform asbestos analysis of bulk samples (accreditation number A3762). Laboratory analysis was conducted in accordance with the United States Environmental Protection Agency (USEPA), Test Method EPA/600-R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, June, 1993 by Polarized Light Microscopy (PLM) as prescribed by O. Reg. 278/05.

Based on the laboratory results and visual identification, no ACM was confirmed present at the time of the inspection.

4.1.2 Lead

Lead was historically used in mortar pigments, ceramic glazing; plumbing solder, electrical equipment and electronics solder, in pipe gaskets as packing in cast iron bell and spigot joints of sanitary drains, flexible plumbing connections, flashing panels, acoustical dampeners, phone cable casing and some architectural applications. In buildings constructed after 1990, these applications are no longer applicable outside of specialized uses (shielding for medical imaging etc.).

As part of this inspection, no paints were identified which could be sampled and are likely to pose a hazard to workers.

Based on visual observation, no lead-containing materials were identified as part of this assessment.

4.1.3 Mercury

Mercury is typically used in building service applications such as fluorescent light tubes, compact fluorescent bulbs, metal halide (sodium halide) lamp bulbs, and neon lights as a vapour. Mercury may exist in thermostats and pipe or mechanical equipment thermometers as a liquid. Mercury is presumed to be present in the above materials.

While sources of mercury may be present, no mercury-containing materials will be impacted by the proposed work.

4.1.4 Silica

Silica is present in rock, stone, soil, and sand. Masonry products such as concrete block, brick, and mortar, as well as concrete and associated products contain silica. Due to its ubiquitous nature, silica was historically used in a wide variety of building materials and is still used today in new construction.

Building materials that are presumed to contain silica were visually identified at the time of the inspection.

4.1.5 Mould

No water damaged or mould growth impacted building materials were observed during the inspection.

4.1.6 Polychlorinated Biphenyls (PCB)

As part of this inspection, a total of 3 sealant samples were collected from building components which may be disturbed during the proposed project. Samples were collected and submitted to Paracel for laboratory analysis under US EPA Method 8082A for PCBs. In Ontario, under Ontario Regulation 362, a PCB-containing solid is defined as any material or substance other than a PCB liquid that contains or is contaminated with PCBs at a concentration greater than 50 µg/g by weight of PCBs.

Based on the laboratory results, no PCB-containing sealants were confirmed present at the time of the inspection.

While additional sources of PCB's may also be present in light ballasts, it is not expected that they will be impacted by the proposed work.

4.1.7 Ozone-Depleting Substances (ODS)

ODS are chemical compounds that include chlorofluorocarbons (cfcs), hydrochlorofluorocarbons (hcfcs), halons, methyl bromide, carbon tetrachloride, hydrobromofluorocarbons, chlorobromomethane, and methyl chloroform which are widely used in cooling and refrigeration. The use of ODS is regulated under Ontario Regulation 463/10 *Ozone Depleting Substances and Other Halocarbons* Made under the Environmental Protection Act.

While sources of ODS may be present within building equipment, it is not expected that they will be impacted by the proposed work.

4.2 Conclusions and Recommendations

A detailed summary of recommended actions is provided in **Table 4.3 of Appendix A**.

In accordance with Section 30 of OHSA and Section 8 of O. Reg. 278/05, the Owner must provide a copy of this report to all contractors doing work at the building. The Owner must also provide a copy of this report to all prospective contractors.

Should any additional suspect Designated Substances be discovered during building renovation demolition, work in the vicinity should cease and the materials should not be disturbed until proper notification, testing and abatement instructions are provided. All waste generated as a

result of any and all work at the Site must be handled, transported and disposed of in accordance with Ontario Regulation 347 made under the Environmental Protection Act and local by-laws. Based on the assessment findings and analytical results, the following abatement measures are presented. It should be noted that the recommended actions are the minimum required actions, as prescribed by the appropriate Acts, regulations, guidelines, standards, codes and general best practice measures.

4.2.1 Asbestos

No ACMs which will be impacted by the proposed work were identified or confirmed present during the assessment. As such, no special management, handling or disposal requirements applies for building maintenance, renovation, construction or demolition work.

4.2.2 Lead

No lead-containing materials were identified during the inspection. As such, no special management, handling and disposal requirements regarding lead apply for building renovation, maintenance, or demolition work.

4.2.3 Mercury

No mercury-containing materials will be impacted by the proposed project. As such, no special requirements for management, handing and disposal by the owner, constructor, contractor, sub-contractors and workers apply.

4.2.4 Silica

Silica is presumed to be present; therefore, special requirements for management and handing are required. The contractor should also consult MOL Occupational Health and Safety Branch's Guideline: *Silica on Construction Projects* (April 2011) for the procedures and methods required to remove and dispose of silica-containing materials.

4.2.5 Mould

No water damage or suspect mould growth was observed during the assessment; therefore, no special management and handling requirements are warranted.

4.2.6 Polychlorinated Biphenyls (PCB)

No PCB-containing materials were identified which will be impacted by the proposed work. As such, no special requirements for management, handing and disposal by the owner, constructor, contractor, sub-contractors and workers apply.

4.2.7 Ozone Depleting Substances (ODS)

No building components presumed to contain ODS were identified which will be impacted by the proposed work. As such, no special requirements for management, handing and disposal by the owner, constructor, contractor, sub-contractors and workers apply.

5.0 LIMITATIONS

Services performed by **MTE Consultants Inc.** (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Environmental Engineering & Consulting profession. No other representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of MTE and the Client. It was completed in accordance with the approved Scope of Work referred to in Section 2.0. As such, this report may not deal with all issues potentially applicable to the site and may omit issues that are or may be of interest to the reader. MTE makes no representation that the present report has dealt with all-important environmental features, except as provided in the Scope of Work. All findings and conclusions presented in this report are based on site conditions, as they existed during the time period of the investigation. This report is not intended to be exhaustive in scope or to imply a risk-free facility.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by any third party as a result of decisions made or actions taken, based upon this report. Others with interest in the site should undertake their own investigations and studies to determine how or if the condition affects them or their plans.

It should be recognized that the passage of time might affect the views, conclusions and recommendations (if any) provided in this report because environmental conditions of a property can change. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may re-assess the contents of this report.

All of which is respectfully submitted,

MTE Consultants Inc.

Gavin Oakes, B.Sc., C.E.T., CIH, CRSP
Manager, Indoor Environments
905-639-2552 ext. 2432
goakes@mte85.com

GGO:

M:\55339\100\55339-100 - DSA Rpt - Fairwind Sr PS Exterior Window Replacement - GGO - Jun-12-24.docx

Appendix A

Tables

TABLE 4.1: BULK ASBESTOS SAMPLE SUMMARY TABLE				
Sample #	**Location**	**Material Description**	**Asbestos Results (% Type)**	**Is Material ACM**
S01A	Music Room - Interior	Red Window Sealant	ND	No
S01B	Music Room - Interior	Red Window Sealant	ND	No
S01C	Guidance - Interior	Red Window Sealant	ND	No
S02A	Music Room - Exterior	Red Window Sealant	ND	No
S02B	Music Room - Exterior	Red Window Sealant	ND	No
S02C	Guidance - Exterior	Red Window Sealant	ND	No

NA: Not Analyzed due to stop positive method **ND**: No asbestos fibres detected above the laboratory minimum detection limit

A bulk material sample containing 0.5% or more asbestos therefore establishes that material as asbestos-containing. In accordance with Table 1 of O. Reg. 278/05, a minimum number of samples for the material to be classified as non asbestos. A homogeneous material is defined by O. Reg. 278/05 “as material that is uniform in colour and texture”. Homogeneous samples are identified by an alphabetical suffix to sample names to represent multiple samples of a homogeneous material. When a homogeneous material is analysed it is determined to be asbestos-containing upon the first positive detection of asbestos equal to or greater than 0.5%. Subsequent samples of the same material are therefore not analysed. Some bulk samples are comprised of multiple layers and as such will require multiple analysis. In such cases each layer is isolated at the laboratory and analysed individually to determine asbestos content. As a result the laboratory may report additional samples beyond the submitted number of samples or include multiple analyses as subsets within a sample.

TABLE 4.2: BULK PCB SAMPLE SUMMARY TABLE				
Sample #	**Location**	**Material Description**	**PCB Content (ug/g)**	**Classification**
PCB-1	Music Room - Interior	Red Window Sealant	<5	Non-PCB
PCB-2	Music Room - Exterior	Red Window Sealant	<5	Non-PCB

As outlined in the Statutory Orders and Regulations (SOR)/2008-273, the PCB Regulations, made under the Canadian Environmental Protection Act, 1999, any material containing PCB at a concentration:
• Greater than 50 µg/g is considered PCB-Containing

Table 4.3 - Summary of Designated Substances and Recommended Actions				
Fairwind Senior Public School Exterior Window Replacement				
Material	**Location(s)**	**Material Description**	**Management Requirements If No Impacts to Material**	**Recommended Actions If Material Will Be Or Likely Be Impacted By Maintenance, Renovation, Construction or Demolition Activities**
Silica	Throughout Interior and Exterior of Building	Brick and Mortar, Concrete	None	Conduct any work during renovation, demolition activities in accordance with the Ministry of Labour Guideline Silica on Construction Projects

Notes:
1) A copy of this report should be provided to all prospective contractors prior to quotation, in accordance with Section 30 of the Occupational Health and Safety Act.
2) Recommended actions are the minimum required actions, as prescribed by the appropriate Acts, regulations, guidelines, standards, codes and general best practice measures. Prior to demolition, the Contractor may choose to alter the approach and combine or break out sections of work. This is acceptable provided that the appropriate Acts, regulations, guidelines, standards and codes are followed and afford protection for the health and safety of workers, occupants and the public that is at least equal to the protection that would be provided by complying with the minimum requirements.
3) All waste generated is subject to characterization and disposal in accordance with Ontario Regulation 347.

Appendix B

Laboratory Certificates of Analysis

PARACEL LABORATORIES LTD.

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15 - 6800 Kitimat Rd
Mississauga, ON, L5N 5M1
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

MTE Consultants Inc. (Burlington)

1016 Sutton Drive, Unit A
Burlington, ON L7L 6B8
Attn: Gavin Oakes

Client PO:
Project: 55339-100 - Fairwind Sr PS
Custody:

Report Date: 4-Jun-2024
Order Date: 29-May-2024

Order #: 2422328

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2422328-01	S01A - Red Sealant - Interior - Music Room
2422328-02	S01B - Red Sealant - Interior - Music Room
2422328-03	S01C - Red Sealant - Interior - Guidance
2422328-04	S02A - Red Sealant - Exterior - Music Room
2422328-05	S02B - Red Sealant - Exterior - Music Room
2422328-06	S02C - Red Sealant - Exterior - Guidance

Approved By:

Emma Diaz

Senior Analyst

PARACEL LABORATORIES LTD.

Order #: 2422328

Certificate of Analysis

Report Date: 04-Jun-2024

Client: MTE Consultants Inc. (Burlington)

Order Date: 29-May-2024

Client PO:

Project Description: 55339-100 - Fairwind Sr PS

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2422328-01	21-May-24	Red	Sealant	No	**Client ID: S01A - Red Sealant - Interior - Music Room**	
					Non-Fibers	100
2422328-02	21-May-24	Red	Sealant	No	**Client ID: S01B - Red Sealant - Interior - Music Room**	
					Non-Fibers	100
2422328-03	21-May-24	Red	Sealant	No	**Client ID: S01C - Red Sealant - Interior - Guidance**	
					Non-Fibers	100
2422328-04	21-May-24	Red	Sealant	No	**Client ID: S02A - Red Sealant - Exterior - Music Room**	
					Non-Fibers	100
2422328-05	21-May-24	Red	Sealant	No	**Client ID: S02B - Red Sealant - Exterior - Music Room**	
					Non-Fibers	100
2422328-06	21-May-24	Red	Sealant	No	**Client ID: S02C - Red Sealant - Exterior - Guidance**	
					Non-Fibers	100

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	Lab Accreditation	Analysis Date
Asbestos, PLM Visual Estimation	AppE to SubE of 40CFR Part763 and EPA/600/R-93/116	1 - Mississauga	CALA 3762	4-Jun-24

Mississauga Lab: 15 - 6800 Kitimat Rd Mississauga, Ontario, L5N 5M1

Work Order Revisions | Comments

None

PARACEL LABORATORIES LTD.

2422328

Office
2319 St. Laurent Blvd.
wa, Ontario K1G 4J8
800-749-1947
aracel@paracellabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 1

Client Name: MTE Consultants Inc	Project Reference: 55339-100 - Fairwind Sr PS	**Turnaround Time:**	
Contact Name: Gavin Oakes	Quote #: MTE Standing Offer	☐ Immediate	☐ 1 Day
Address: 1016 Sutton Drive, Unit A	PO #:	☐ 4 Hour	☐ 2 Day
Burlington, ON L7L 6B8	Email Address: goakes@mte85.com	☐ 8 Hour	☐ 3 Day
Telephone: 905-639-2552			☒ Regular
		Date Required:	

ASBESTOS & MOLD ANALYSIS

Matrix: ☐ Air ☒ Bulk ☐ Tape Lift ☐ Swab ☐ Other **Regulatory Guideline:** ☒ ON ☐ QC ☐ AB ☐ SK ☐ Other:

Analyses: ☐ Microscopic Mold ☐ Culturable Mold ☐ Bacteria GRAM ☐ PCM Asbestos ☒ PLM Asbestos ☐ Chatfield Asbestos ☐ TEM Asbestos

Paracel Order Number: 2422328

	Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk: Identify Distinct Building Materials to Be Analyzed (if not specified, all materials identified will be analyzed) *	Positive Stop?
1	S01A - Red Sealant - Interior - Music Room	May 21/24	-	PLM		☒
2	S01B - " - " - Music Room	"	-	"		☒
3	S01C - " - " - Guidance	"	-	"		☒
4	S02A - Red Sealant - Exterior - Music Room	"	-	"		☒
5	S02B - " - " - Music Room	"	-	"		☒
6	S02C - " - " - Guidance	"	-	"		☐
7						☐
8						☐
9						☐
10						☐
11						☐
12						☐

* If left blank, all distinct materials identified in the samples will be analyzed and reported separately as per EPA 600/R-93/116. Additional charges will apply.

Comments:

Method of Delivery: Purolator

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Gavin Oakes			
Date/Time: May 27/24 @ 3:30 PM	Date/Time:	Date/Time: May 29/24 13:00	Date/Time: May 29/24 14:59

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Certificate of Analysis

MTE Consultants Inc. (Burlington)
1016 Sutton Drive, Unit A
Burlington, ON L7L 6B8
Attn: Gavin Oakes

Client PO:
Project: 55339-100 - Fairwind Sr PS
Custody:

Report Date: 4-Jun-2024
Order Date: 29-May-2024

Order #: 2422237

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2422237-01	PCB-1 - Red Sealant - Interior - music
2422237-02	PCB-2 - Red Sealant - Exterior - music

Approved By:

Dale Robertson, BSc
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	SW846 8082A - GC-ECD	30-May-24	31-May-24

Certificate of Analysis

Report Date: 04-Jun-2024

Client: **MTE Consultants Inc. (Burlington)**

Order Date: 29-May-2024

Client PO:

Project Description: 55339-100 - Fairwind Sr PS

	Client ID:	PCB-1 - Red Sealant - Interior - music	PCB-2 - Red Sealant - Exterior - music	-	-		
	Sample Date:	21-May-24 16:00	21-May-24 16:00	-	-	-	-
	Sample ID:	2422237-01	2422237-02	-	-		
	Matrix:	Other	Other	-	-		
	MDL/Units						
PCBs							
PCBs, total	5 ug/g	<5	<5	-	-	-	-
Decachlorobiphenyl	Surrogate	66%	128%	-	-	-	-

Certificate of Analysis

Report Date: 04-Jun-2024

Client: **MTE Consultants Inc. (Burlington)**

Order Date: 29-May-2024

Client PO:

Project Description: 55339-100 - Fairwind Sr PS

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs								
PCBs, total	ND	5	ug/g					
Surrogate: Decachlorobiphenyl	*5.63*		*%*	*113*	*60-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	573	100	ug/g	148			118.0	40	QR-05
Surrogate: Decachlorobiphenyl	*6.20*		*%*		*124*	*60-140*			

Certificate of Analysis

Report Date: 04-Jun-2024

Client: **MTE Consultants Inc. (Burlington)**

Order Date: 29-May-2024

Client PO:

Project Description: 55339-100 - Fairwind Sr PS

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	21	5	ug/g	ND	105	60-140			
Surrogate: Decachlorobiphenyl	*6.01*		*%*		*120*	*60-140*			

Qualifier Notes:

QC Qualifiers:

QR-05 Duplicate RPDs higher than normally accepted. Remaining batch QA\QC was acceptable. May be sample effect.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

PARACEL LABORATORIES LTD.

Paracel ID: 2422237

rant Blvd.
K1G 4J8
7
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.com

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2422237	

Client Name: MTE Consultants Inc	Project Ref: 55338-100 - Nahani Way PS	Page 1 of 1
Contact Name: Gavin Oakes	Quote #: MTE Standing Offer	**Turnaround Time**
Address: 1016 Sutton Drive, Unit A Burlington, ON L7L 6B8	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 905-639-2552	E-mail: goakes@mte85.com	Date Required:

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	PCB				
1	PCB-1 - Red Sealant - Interior - Music	O	-	1	May 21/24	4:00 pm								X				
2	PCB-2 - Red Sealant - Exterior - Music	O	-	1	"	"								X				
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Required Analysis

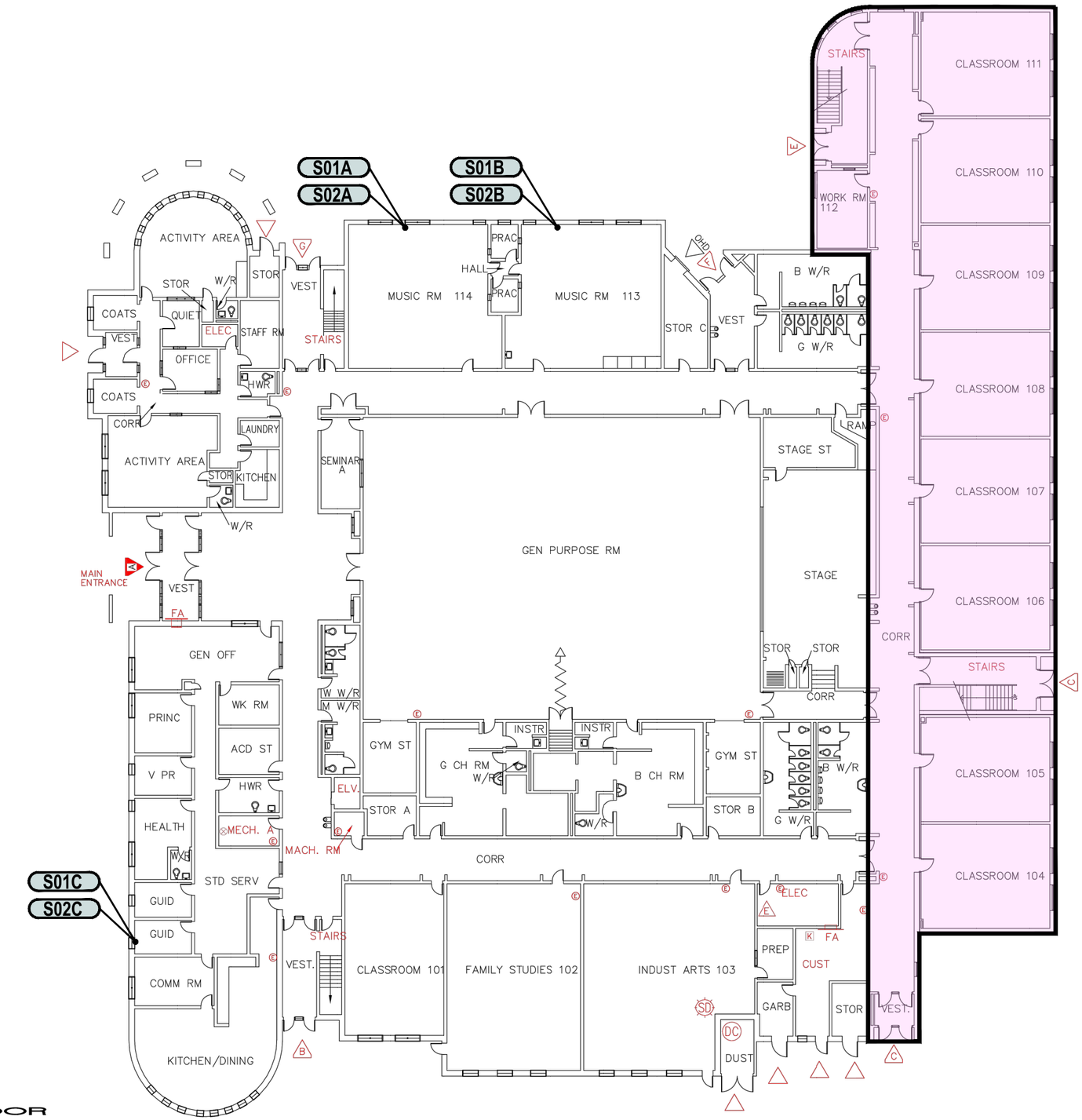
Comments:

Method of Delivery: Purolator

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By: SP
Relinquished By (Print): Gavin Oakes	Date/Time:	Date/Time: May 29 24 9:15	Date/Time: May 29, 2024 9:5[illegible]
Date/Time: May 27/24 @ 3:30 pm	Temperature: °C	Temperature:	pH Verified: ☐ By:

Appendix C

Figures



FIRST FLOOR

Notes:

ALL DRAWINGS TO BE REFERENCED WITH THE DSA REPORT. LOCATIONS AND QUANTITIES ARE APPROXIMATE.

ALL KNOWN OR SUSPECT DESIGNATED SUBSTANCES ARE NOT DEPICTED ON THIS FIGURE. REFER TO THE DSA REPORT FOR A COMPLETE LIST OF IDENTIFIED KNOWN AND SUSPECT DESIGNATED SUBSTANCES.

THIS FIGURE IS COLOUR DEPENDENT, PHOTOCOPIES MAY ALTER INTERPRETATION OF FIGURE. ALWAYS REFER TO ORIGINAL DRAWINGS AND DSA REPORT.

Designated Substances and Hazardous Materials Legend

S02CD — Sample Identification

Windows Installed 2001/ 2002

MTE
Engineers, Scientists, Surveyors

Ph. (905) 639-2552 www.mte85.com

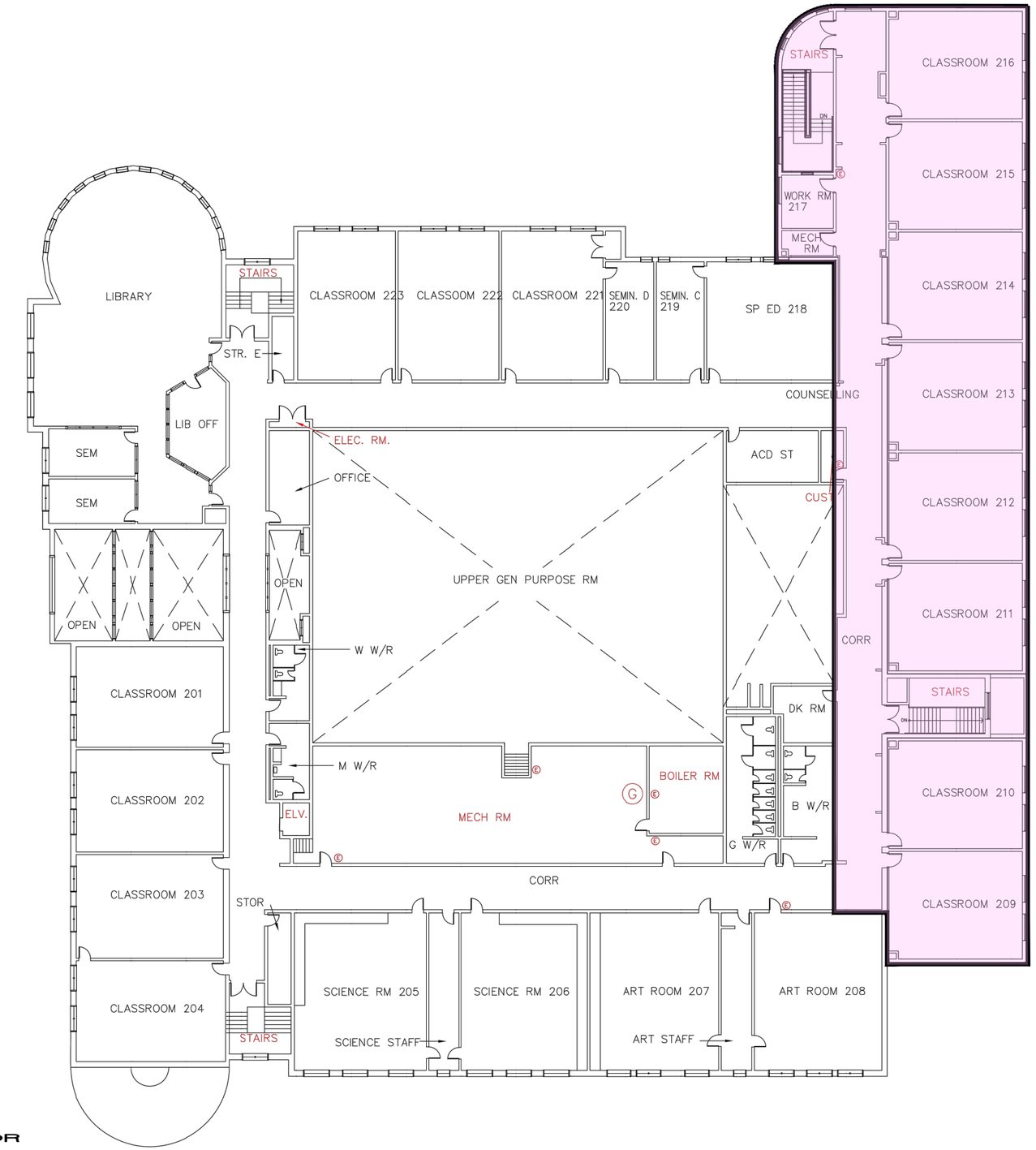
CLIENT
Peel District School Board

PROJECT
DESIGNATED SUBSTANCE AUDIT

DRAWING
FAIRWIND SENIOR PS
EXTERIOR WINDOW REPLACEMENT
FLOOR PLANS- FIRE SAFETY PLAN
5235 FAIRWIND DRIVE, MISSISSAUGA, ON

Project Manager	G. OAKES	Date	JUNE 2024
Baseplan By	MTE	Project No.	55339-100
Figure By	SXS	Drawing No.	1.0
Scale	N.T.S.		

Project: 43923-100 CAD: P:\P\55339\100\55339-100 DSS.DWG — Plotted By: MVanRuyven — March 20, 2018 — 2:00 pm



SECOND FLOOR

Notes:

ALL DRAWINGS TO BE REFERENCED WITH THE DSA REPORT. LOCATIONS AND QUANTITIES ARE APPROXIMATE.

ALL KNOWN OR SUSPECT DESIGNATED SUBSTANCES ARE NOT DEPICTED ON THIS FIGURE. REFER TO THE DSA REPORT FOR A COMPLETE LIST OF IDENTIFIED KNOWN AND SUSPECT DESIGNATED SUBSTANCES.

THIS FIGURE IS COLOUR DEPENDENT, PHOTOCOPIES MAY ALTER INTERPRETATION OF FIGURE. ALWAYS REFER TO ORIGINAL DRAWINGS AND DSA REPORT.

Designated Substances and Hazardous Materials Legend

S02CD — **Sample Identification**

Windows Installed 2001/ 2002

MTE
Engineers, Scientists, Surveyors

Ph. (905) 639-2552 www.mte85.com

CLIENT

Peel District School Board

PROJECT

DESIGNATED SUBSTANCE AUDIT

DRAWING

FAIRWIND SENIOR PS
EXTERIOR WINDOW REPLACEMENT
FLOOR PLANS- FIRE SAFETY PLAN
5235 FAIRWIND DRIVE, MISSISSAUGA, ON

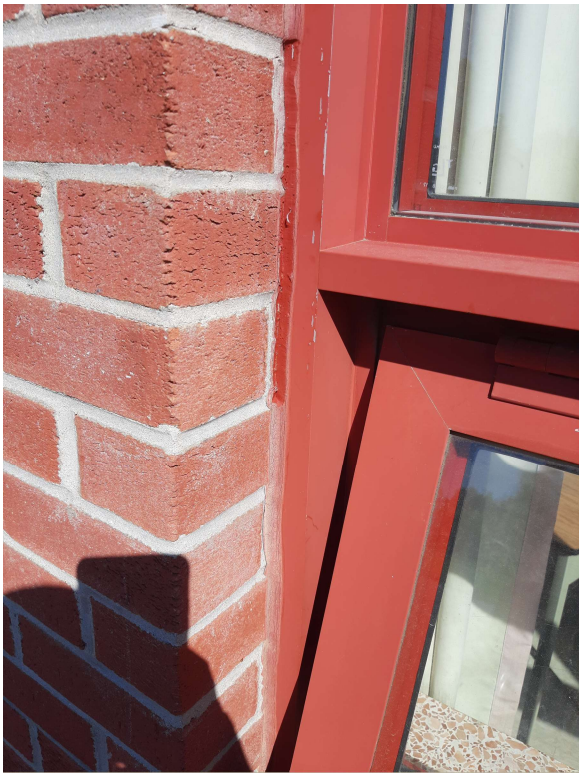
Project Manager	G. OAKES	Date	JUNE 2024
Baseplan By	MTE	Project No.	55339-100
Figure By	SXS	Drawing No.	2.0
Scale	N.T.S.		

March 20, 2018 - 2:00 pm - Plotted By: MVanRuyven Project: 43923-100 CAD: P:\P\55339\100\55339-100 DSS.DWG

Appendix D

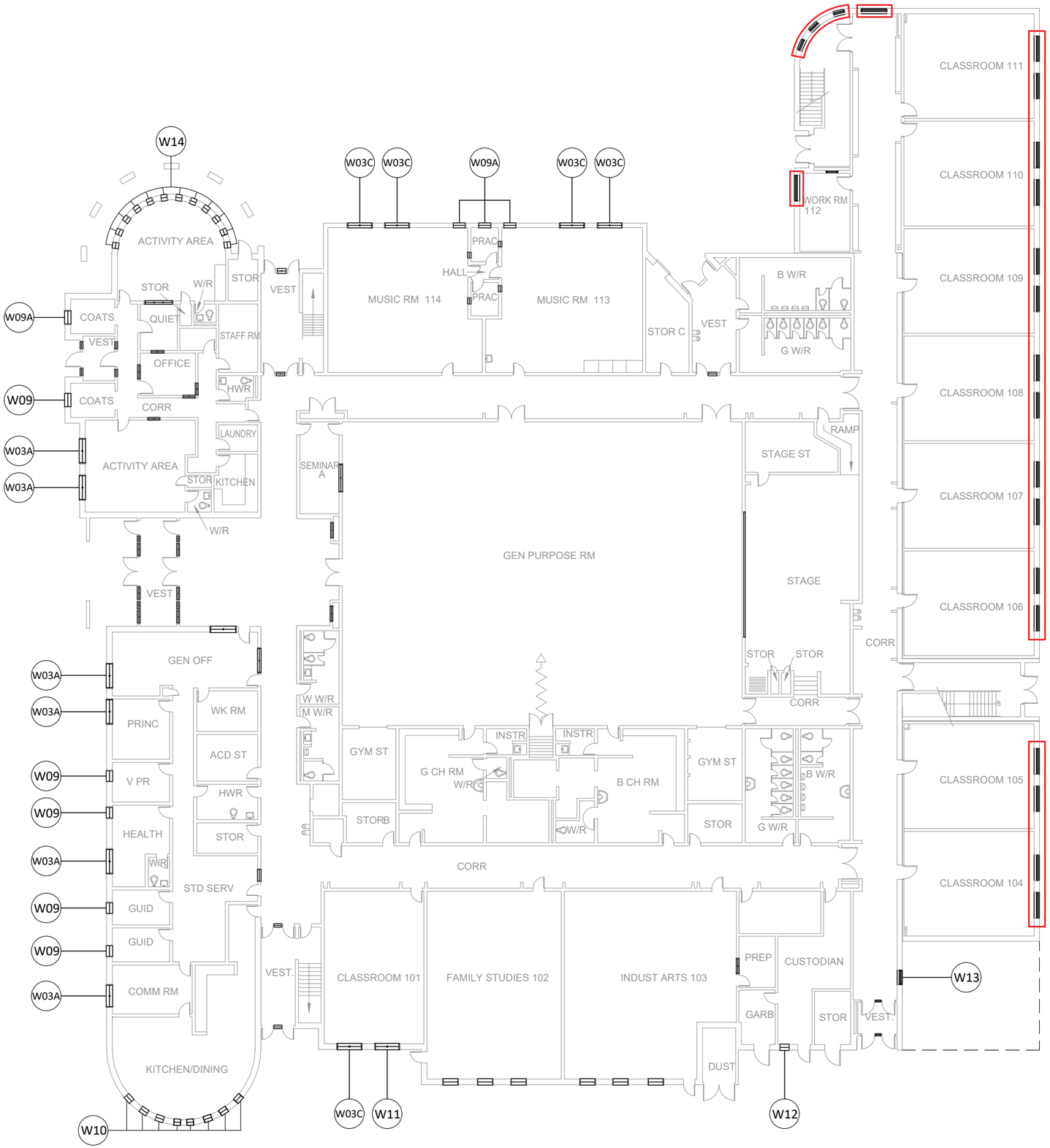
Photographic Log

Photograph No. 1 – Red sealant on the interior perimeter of the windows was sampled and found to be non-asbestos. Sampling also confirmed the sealants as non-PCB.



Photograph No. 2 – Red sealant on the exterior perimeter of the windows was sampled and found to be non-asbestos. Sampling also confirmed the sealants as non-PCB.

DRAWINGS



1
A1
FIRST FLOOR PLAN
SCALE: NTS

PROJECT NORTH

TRUE NORTH

LEGEND

WINDOW PERIMETER CAULKING REPLACEMENT

NOTE:

ALL MEASUREMENTS ARE APPROXIMATE. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND JOB SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE APPROPRIATE AUTHORITY PRIOR TO TENDER CLOSING.

No	Date	Remarks

peel District School Board

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PROJECT NAME

EXTERIOR WINDOW REPLACEMENT

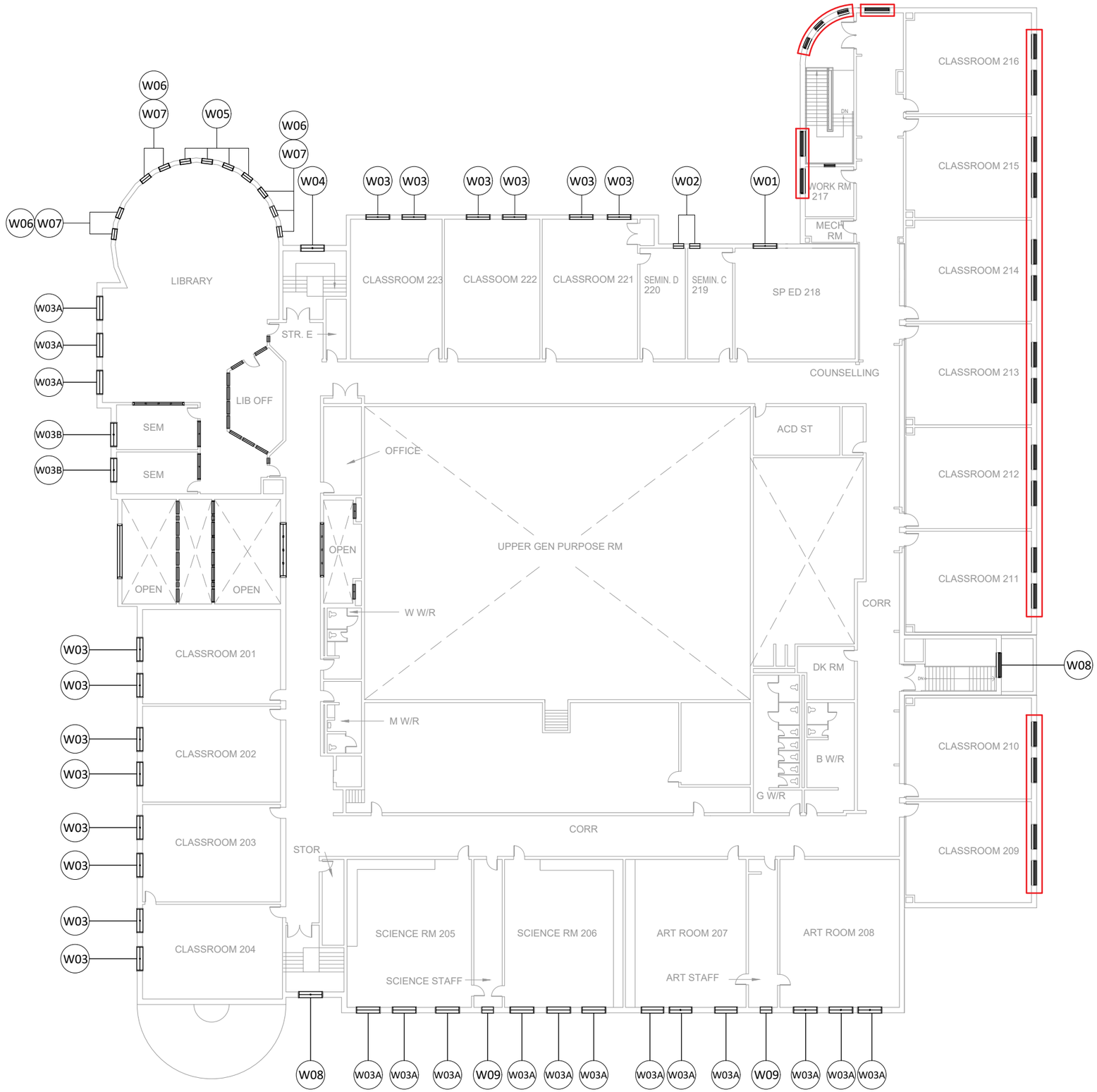
PROJECT LOCATION

FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME

FIRST FLOOR PLAN

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A1



1 / A2 SECOND FLOOR PLAN
SCALE: NTS

PROJECT NORTH

TRUE NORTH

LEGEND

WINDOW PERIMETER CAULKING REPLACEMENT

NOTE:

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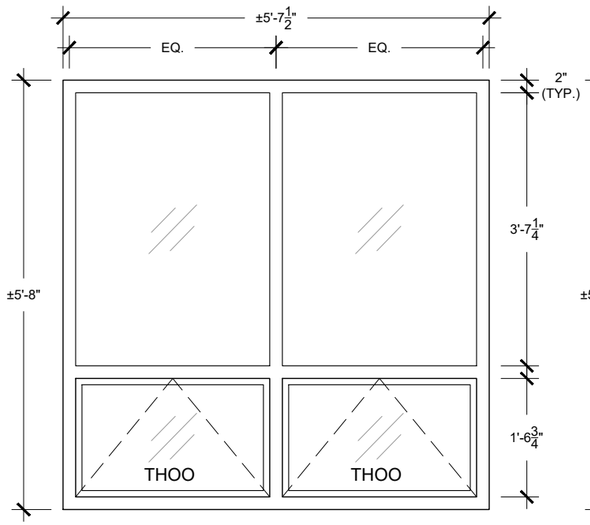
PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

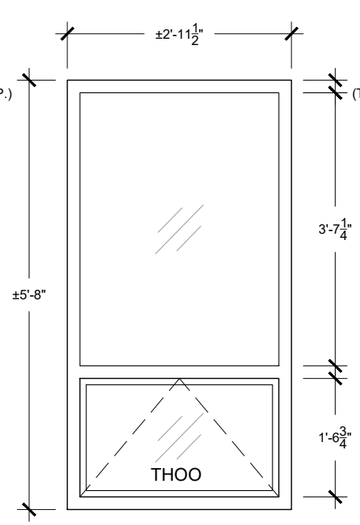
PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
SECOND FLOOR PLAN

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A2



W01
QUANTITY = 1



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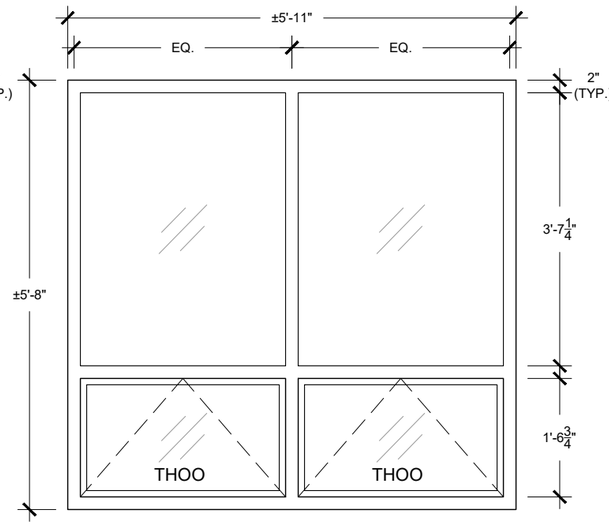
QUANTITY = 2



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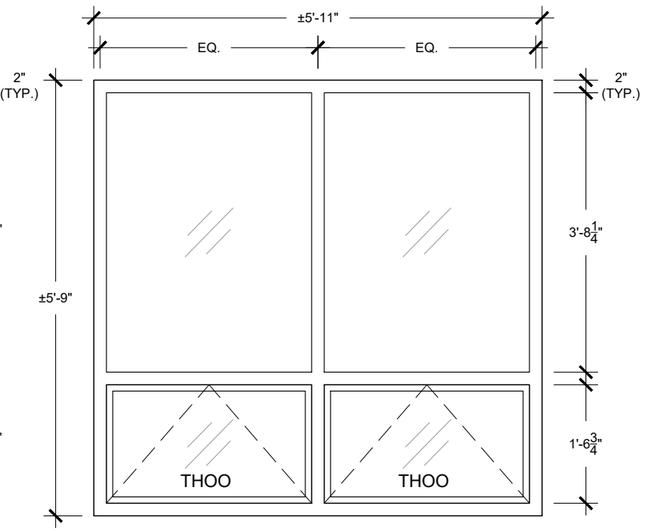
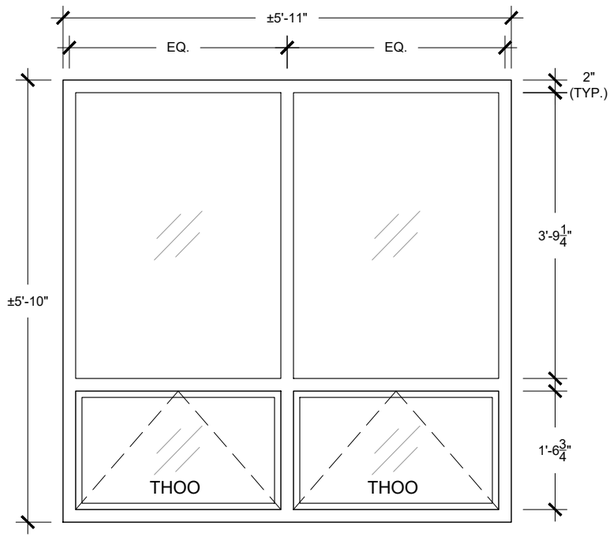
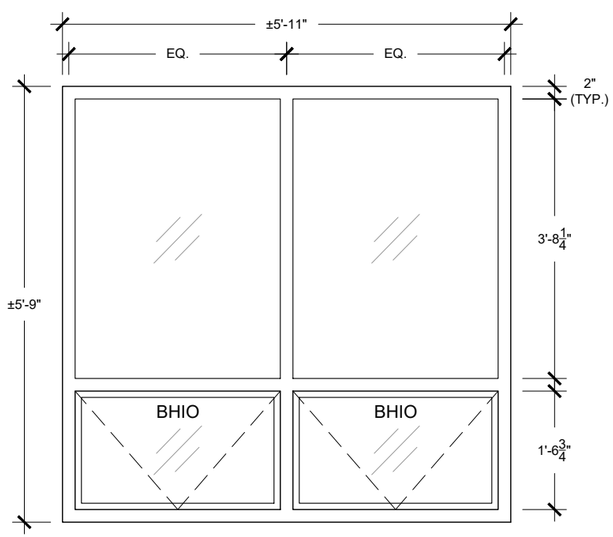
QUANTITY = 14



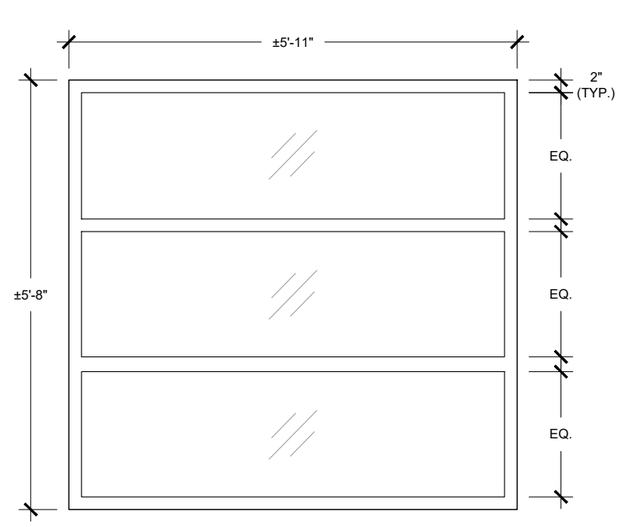
W03A
QUANTITY = 21



W03B
QUANTITY = 2



W03C
QUANTITY = 5



W04
QUANTITY = 1

GENERAL NOTES:
1. WINDOWS;
   WINDOW FRAME: ANODIZED ALUMINUM (UNLESS COLOUR AND FINISH NOTED OTHERWISE AND APPROVED BY PDSB.
2. PANNING/TRIM ARE TO BE ADDED, WHERE REQUIRED TO MATCH EXISTING CONDITIONS.
3. REMOVE AND RE-INSTALL ANY MECHANICAL/ELECTRICAL COMPONENTS, AS REQUIRED. RADIATORS ARE TO BE COVERED AND PROTECTED PRIOR TO AND FOR THE DURATION OF THE WORK.
4. CONTRACTOR TO REMOVE AND STORE ALL WINDOW BLINDS. PDSB TO REINSTATE. .
5. CONTRACTOR TO GRIND AND PAINT EXISTING LINTELS TO MATCH COLOUR OF NEW FRAMES WHERE EXPOSED AT THE EXTERIOR AFTER INSTALLATION OF NEW ASSEMBLIES
6. WHERE WINDOWS ARE BEING REPLACED, CONTRACTOR TO REMOVE EXISTING SILLS AND REPLACE WITH NEW CORIAN SILL.

1/A3 WINDOW SCHEDULE
SCALE: 1/2"=1'-0"

NOTE:
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No	Date	Remarks

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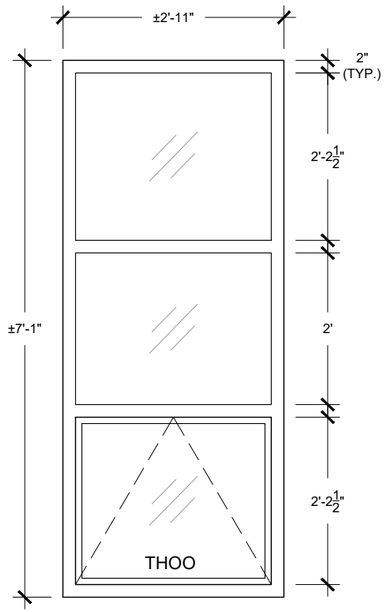
PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
WINDOW SCHEDULE

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A3



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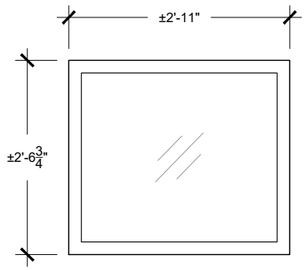
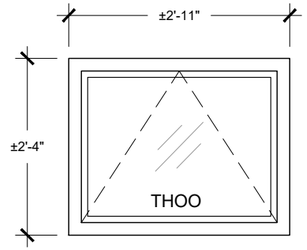
QUANTITY = 4



W06
QUANTITY = 7



W07
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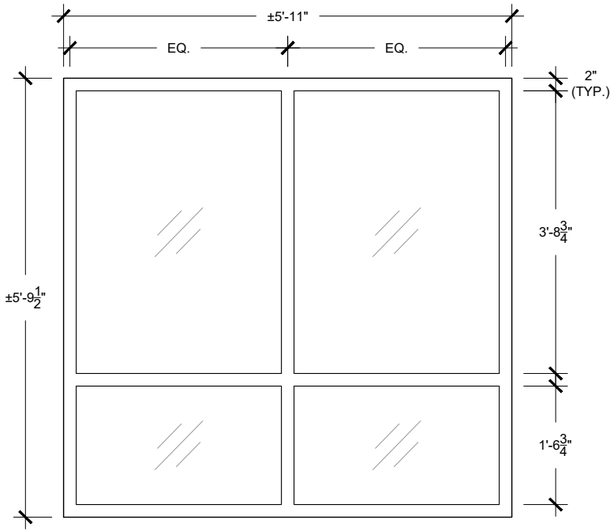
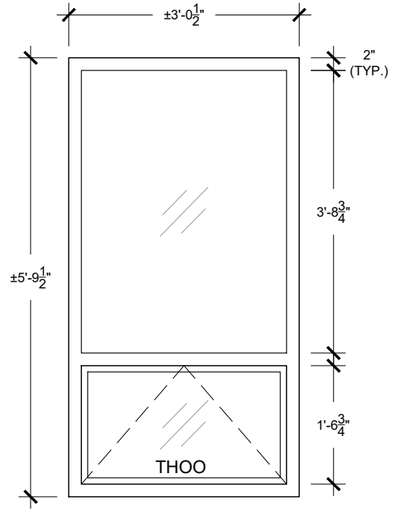
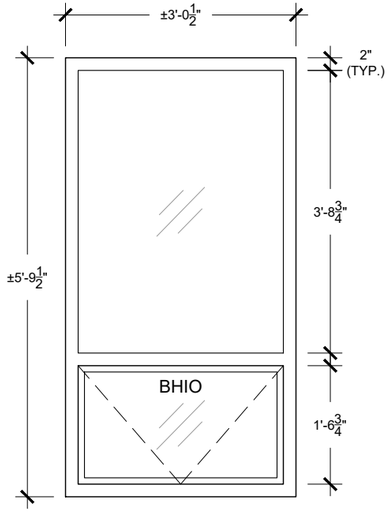


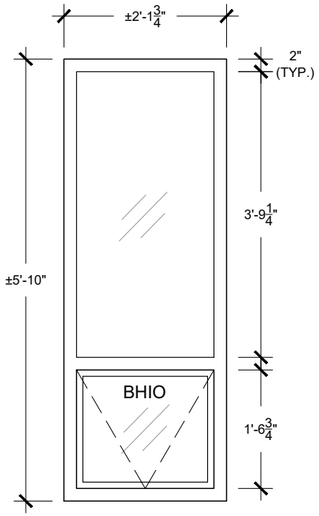
W08
QUANTITY = 2



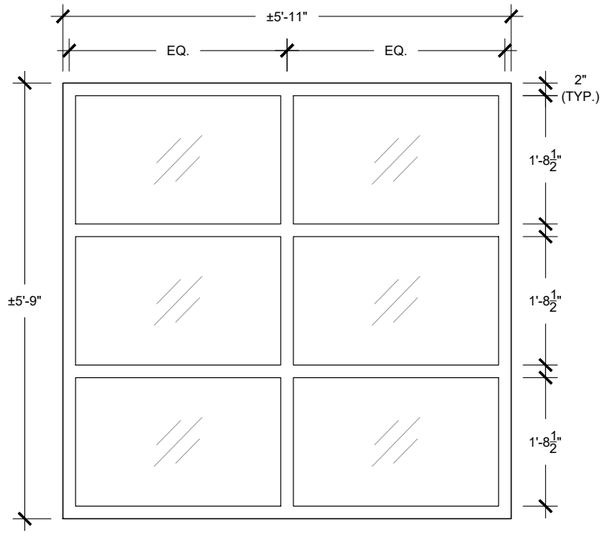
W09
QUANTITY = 7



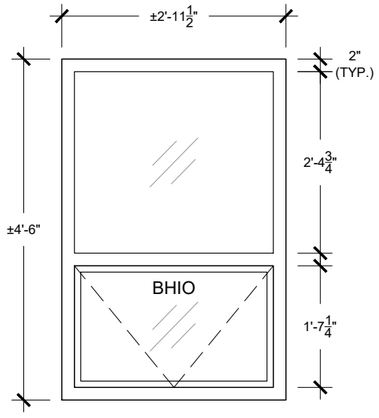
W09A
QUANTITY = 4



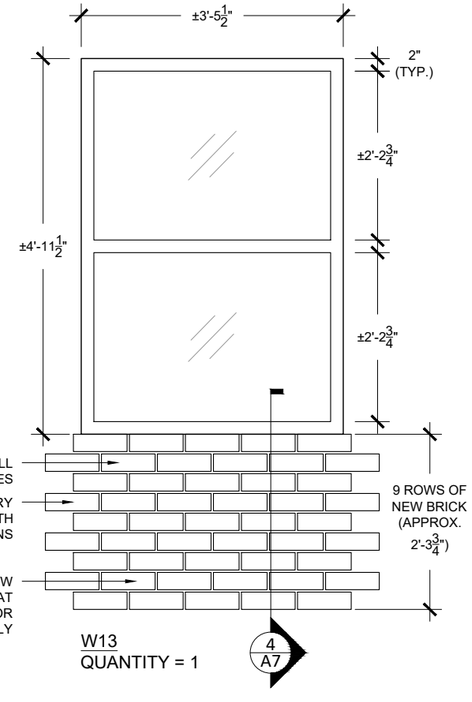
W10
QUANTITY = 8



W11
QUANTITY = 1
(FIRE RATED)



W12
QUANTITY = 1



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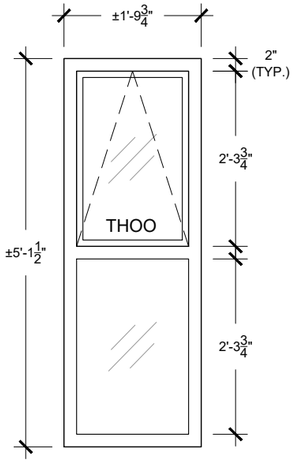
QUANTITY = 1



W14
QUANTITY = 12

1
A4
WINDOW SCHEDULE
SCALE: 1/2"=1'-0"

NOTE:
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PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
WINDOW SCHEDULE

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A4

PHOTO 1:
VIEW OF EXISTING WINDOW W01

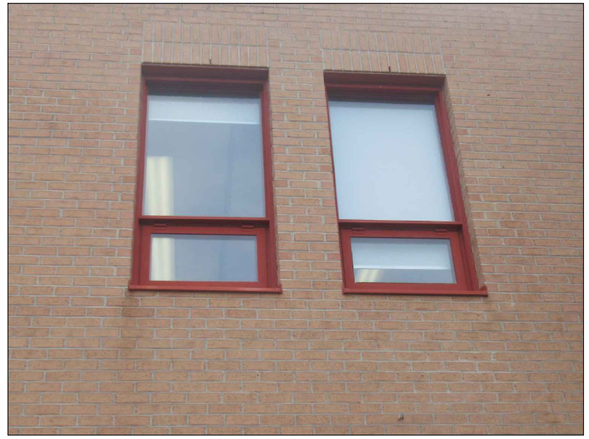

PHOTO 2:
VIEW OF EXISTING WINDOW W02

PHOTO 3:
VIEW OF EXISTING WINDOW W03

PHOTO 4:
VIEW OF EXISTING WINDOW W03A

PHOTO 5:
VIEW OF EXISTING WINDOW W03B

PHOTO 6:
VIEW OF EXISTING WINDOW W04

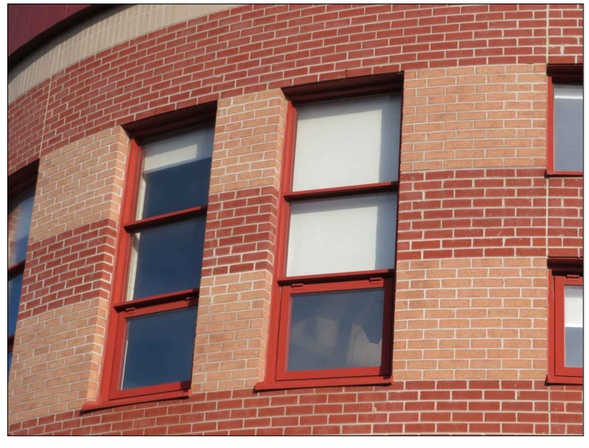

PHOTO 7:
VIEW OF EXISTING WINDOW W05

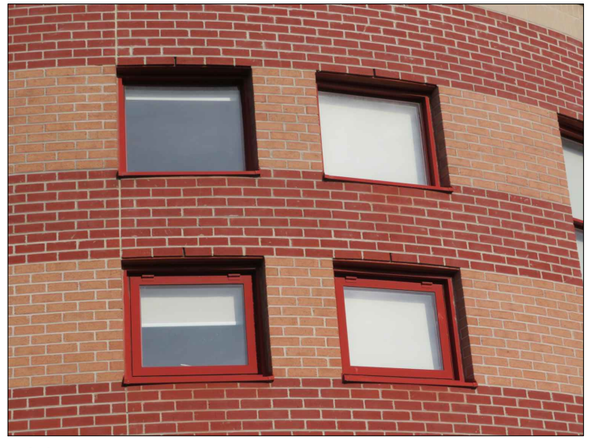

PHOTO 8:
VIEW OF EXISTING WINDOW W06 (UPPER) AND W07 (LOWER)

PHOTO 9:
VIEW OF EXISTING WINDOW W08

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PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
EXISTING WINDOW CONDITIONS

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A5

PHOTO 10:
VIEW OF EXISTING WINDOW W09

PHOTO 11:
VIEW OF EXISTING WINDOW W10

PHOTO 12:
VIEW OF EXISTING WINDOW W11

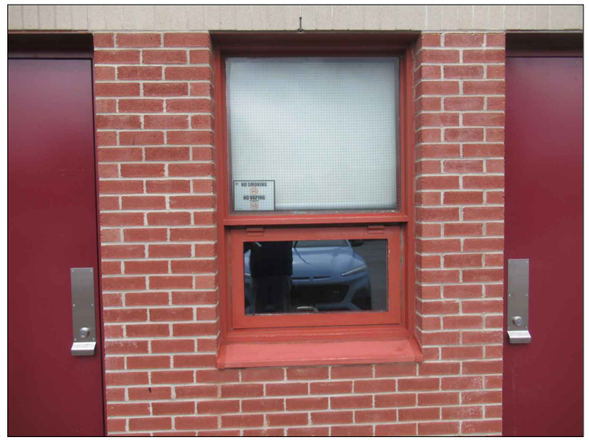

PHOTO 13:
VIEW OF EXISTING WINDOW W12

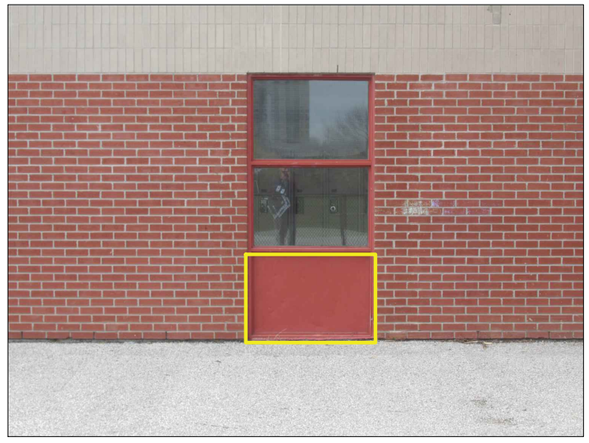

PHOTO 14:
VIEW OF EXISTING WINDOW W13, AREA OF NEW MASONRY WALL TO BE INSTALLED AT BASE OF NEW WINDOW OUTLINED IN YELLOW

PHOTO 15:
VIEW OF EXISTING WINDOW W14

PHOTO 16:
TYPICAL VIEW OF EXISTING SILL.

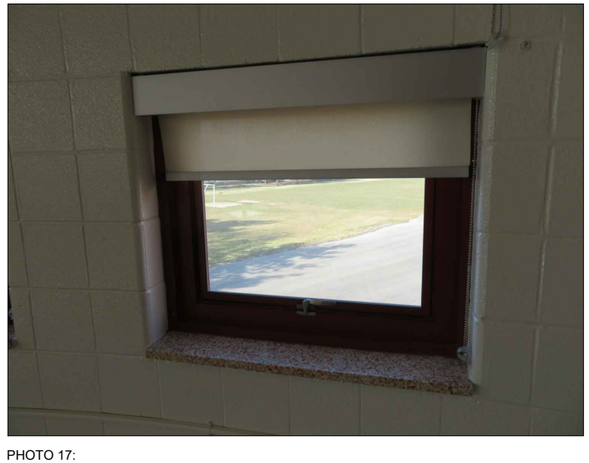

PHOTO 17:
ADDITIONAL VIEW OF EXISTING SILL AND BLINDS.

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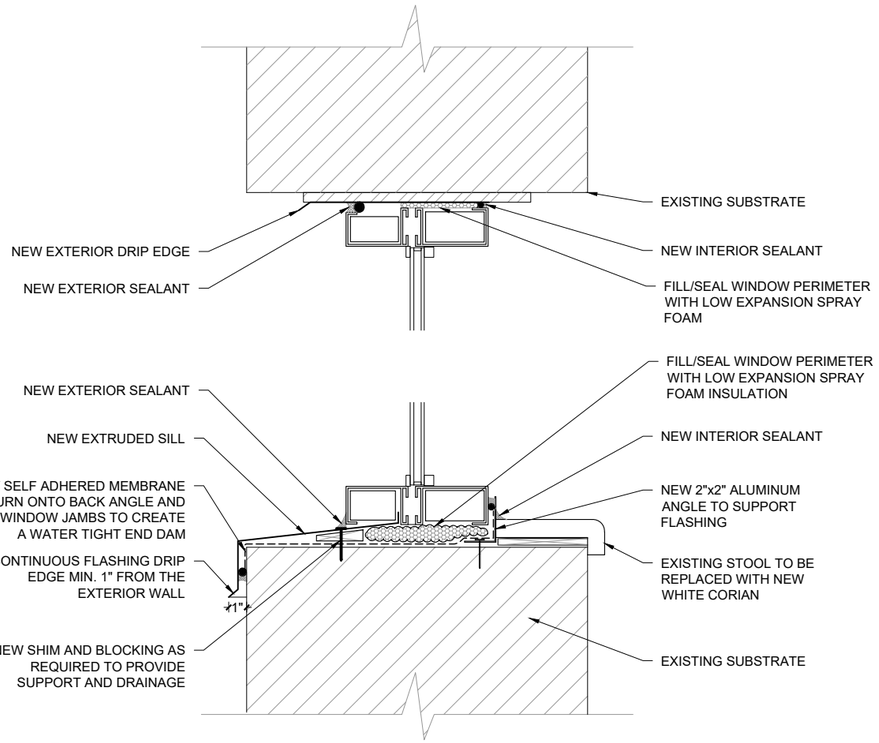
PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

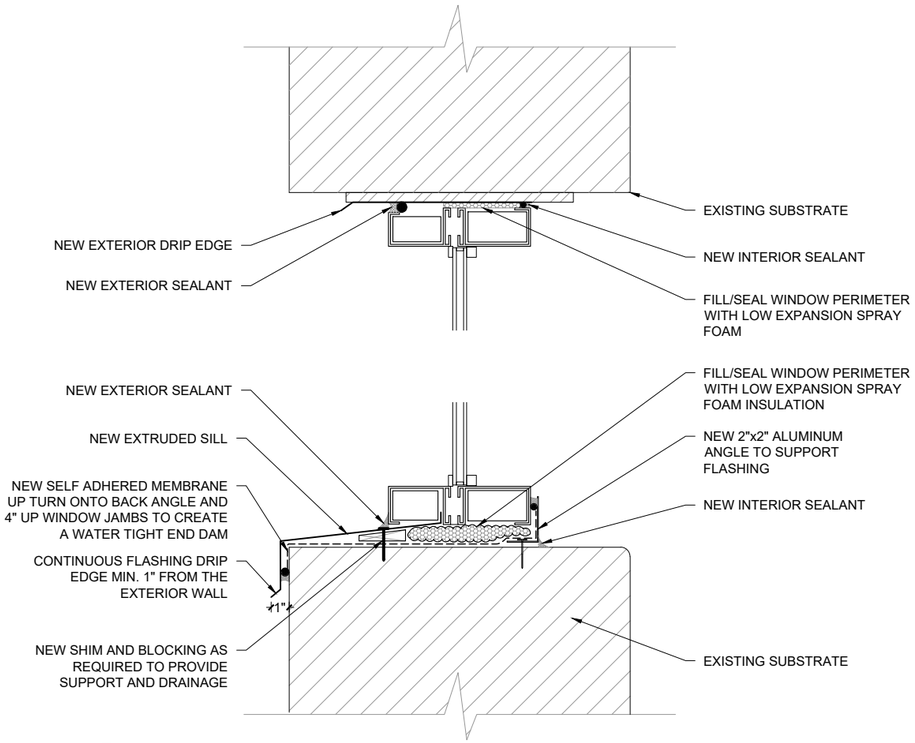
PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
EXISTING WINDOW CONDITIONS

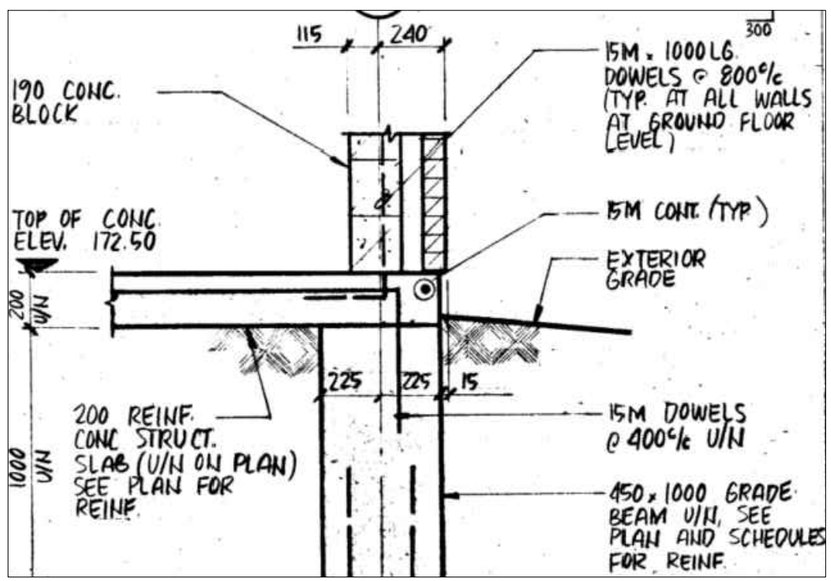
PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A6



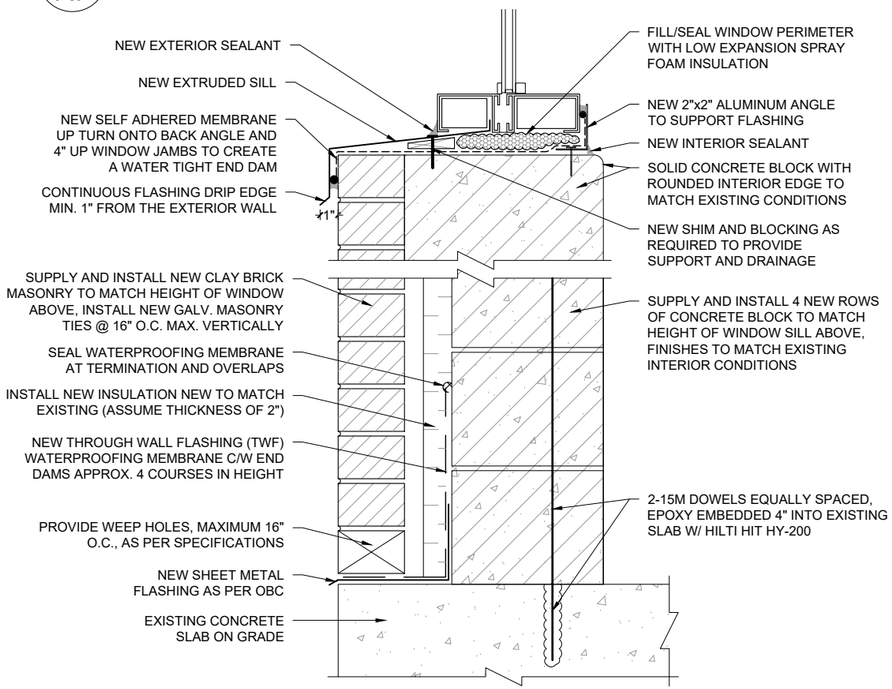
1 A7 NEW WINDOW HEAD AND SILL DETAIL 1
SCALE: 1 1/2"=1'-0"



2 A7 NEW WINDOW HEAD AND SILL DETAIL 2
SCALE: 1 1/2"=1'-0"



3 A7 EXISTING WALL CONDITIONS
SCALE: 1 1/2"=1'-0"



4 A7 EXISTING WALL CONDITIONS
SCALE: 1 1/2"=1'-0"

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PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
PROPOSED WINDOW DETAILS

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A7

SCHEDULE 1

WINDOW MATRIX

Window Type	Floor	Location	Width (")	Height (")	Quantity	Type	Operable Type	Fire Rated	Notes
W01	2	Special Education 218	67-1/2"	68"	1	Operable	Awning	N	
W02	2	Seminar C (219)	35-1/2"	68"	1	Operable	Awning	N	
W02	2	Seminar D (220)	35-1/2"	68"	1	Operable	Awning	N	
W03	2	Classroom 221	71"	68"	2	Operable	Awning	N	
W03	2	Classroom 222	71"	68"	2	Operable	Awning	N	
W03	2	Classroom 223	71"	68"	2	Operable	Awning	N	
W04	2	Stairwell	71"	68"	1	Fixed	N/A	N	
W03A	2	Library	71"	69'	3	Operable	Awning	N	
W05	2	Library	85"	35"	4	Operable	Awning	N	
W06	2	Library	35"	30-3/4"	7	Fixed	N/A	N	
W07	2	Library	35"	28"	7	Operable	Awning	N	
W03B	2	Seminar	71"	70"	1	Operable	Awning	N	
W03B	2	Seminar	71"	70"	1	Operable	Awning	N	
W03	2	Classroom 201	71"	68"	2	Operable	Awning	N	
W03	2	Classroom 202	71"	68"	2	Operable	Awning	N	
W03	2	Classroom 203	71"	68"	2	Operable	Awning	N	
W03	2	Classroom 204	71"	68"	2	Operable	Awning	N	
W08	2	Stairwell	71"	69-1/2"	1	Fixed	N/A	N	
W03A	2	Science Room 205	71"	69'	3	Operable	Awning	N	
W09	2	Science Staff Room	36-1/2"	69-1/2"	1	Operable	Awning	N	
W03A	2	Science Room 206	71"	69'	3	Operable	Awning	N	
W03A	2	Art Room 207	71"	69'	3	Operable	Awning	N	
W09	2	Art Staff Room	36-1/2"	69-1/2"	1	Operable	Awning	N	
W03A	2	Art Room 208	71"	69'	3	Operable	Awning	N	
W08	2	Stairwell	71"	69-1/2"	1	Fixed	N/A	N	
W03C	1	Music Room 113	71"	69'	2	Operable	Awning	N	
W09A	1	Music Room 113	36-1/2"	69-1/2"	1	Operable	Awning	N	
W09A	1	Music Practice Room	36-1/2"	69-1/2"	1	Operable	Awning	N	
W09A	1	Music Room 114	36-1/2"	69-1/2"	1	Operable	Awning	N	
W03C	1	Music Room 114	71"	69'	2	Operable	Awning	N	
W14	1	Daycare Activity Area	21-3/4"	61-1/2"	12	Operable	Awning	N	
W09A	1	Daycare Coat Room	36-1/2"	69-1/2"	1	Operable	Awning	N	
W09	1	Daycare Coat Room	36-1/2"	69-1/2"	1	Operable	Awning	N	
W03A	1	Daycare Activity Area	71"	69'	2	Operable	Awning	N	
W03A	1	General Office	71"	69'	1	Operable	Awning	N	
W03A	1	Principal Office	71"	69'	1	Operable	Awning	N	
W09	1	Vice Principal Office	36-1/2"	69-1/2"	1	Operable	Awning	N	
W09	1	Health Room	36-1/2"	69-1/2"	1	Operable	Awning	N	
W03A	1	Health Room	71"	69'	1	Operable	Awning	N	
W09	1	Guidance	36-1/2"	69-1/2"	1	Operable	Awning	N	
W09	1	Guidance	36-1/2"	69-1/2"	1	Operable	Awning	N	
W03A	1	Communications Room	71"	69'	1	Operable	Awning	N	
W10	1	Kitchen/Dining Room	25-3/4"	70"	8	Operable	Awning	N	
W03C	1	Classroom 101	71"	69'	1	Operable	Awning	N	
W11	1	Classroom 101	71"	69'	1	Fixed	N/A	Y	Fire Rated
W12	1	Custodian	35-1/2"	54"	1	Operable	Awning	N	
W13	1	Corridor	41-1/2"	87-1/4"	1	Fixed	N/A	N	Install new masonry below

NOTE:
ALL MEASUREMENTS ARE APPROXIMATE. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND JOB SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE APPROPRIATE AUTHORITY PRIOR TO TENDER CLOSING.

No	Date	Remarks

peel District School Board
Structural Department.
Maintenance Services
ISO 9002 Registered.
933 Central Parkway West,
Mississauga, ON, Canada.
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CONSULTANT:
PINCHIN
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PROJECT NAME
EXTERIOR WINDOW REPLACEMENT

PROJECT LOCATION
FAIRWIND SENIOR PUBLIC SCHOOL
5235 FAIRWIND DRIVE,
MISSISSAUGA, ON

DRAWING NAME
WINDOW MATRIX

PROJECT NO.	SCALE:
333662.021	AS SHOWN
DRAWN BY: C. WOOD	REVIEWED BY: M. PINEROS
DATE: JUNE 2024	DRAWING NO. A0