

Project Specification for

R.A Riddell Elementary School Ceiling Replacement

at

200 Cranbrook Dr., Hamilton, ON L9C 4S9

For

Hamilton-Wentworth District School Board

20 Education Court

Hamilton, Ontario

HWDSB No: 2026-134-P02212

JFA Project: 2519

April 7, 2026

Jason Fung Architect Inc.

211-675 King St W, Toronto ON, M5V 1M9

647 948 9176 www.jasonfung.ca

I GENERAL

I.1 OWNER

.1 Owner for the Project is:

Hamilton-Wentworth District School Board
20 Education Court
Hamilton, Ontario
L9A 0B9

I.2 CONSULTANTS

.1 The following firms comprise the Consultant team for the Project:

.1 Architect

JASON FUNG ARCHITECT INC.

211-675 King St W,

Toronto ON, M5V 1M9

647 948 9176

www.jasonfung.ca

.2 Hazardous Building Materials Assessment (Pre-construction)

Pinchin Ltd.

2 Carlton St. suite 1820,

Toronto, ON M5B 1J3

.3 Fire Alarm Engineer

YMSD Consulting

226 Pacific Ave.

Toronto, ON M6P 2P5

416-763-2144

END OF SECTION

I GENERAL

I.01 Section list

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1.02 APPENDIX

.1 Appendix A, Hazardous Building Materials Assessment (Pre-construction)

2 PRODUCTS – Not Used

3 EXECUTION – Not Used

END OF SECTION

I GENERAL

I.01 DEFINITIONS

- .1 Available Project Information: information identified in this Section, of any type, and in any form, and identified as Available Project Information. Available Project Information, or any part thereof, does not form part of the Contract Documents unless specifically incorporated into Contract Documents by means of copying, transcribing, or referencing, or is listed in the Agreement as a Contract Document.
- .2 Contractor: synonymous with Bidder

I.02 USE AND RELIANCE UPON AVAILABLE PROJECT INFORMATION

- .1 Available Project Information is made available to Bidders for the purpose of disclosing information that is available to JASON FUNG ARCHITECT INC. and HWDSB.
- .2 Per CCDC, Available Project information is made available to Bidders to fulfill the Consultant's duty to disclose all relevant Project information to Bidders.
- .3 Do not consider the Available Project Information as a representation or warranty that the information is necessarily accurate, complete, or appropriate.
- .4 Bidders are responsible for interpreting and forming their own conclusions about the Available Project Information, including consideration of the time the document was created. Bidders are encouraged to obtain specialist advice if necessary. JASON FUNG ARCHITECT INC., Pinchin Ltd. and HWDSB assume no responsibility for interpretations or conclusions made.
- .5 In the event there is a conflict between the Contract Documents and the guidelines contained in the Available Project Information, the Contract Documents shall govern.

I.03 AVAILABLE PROJECT INFORMATION

- .1 The following Available Project Information is incorporated into the Contract Documents:
 - .1 Existing Hazardous Material Information

I.04 ENERGY MODELLING DATA

- .1 Not used.

I.05 GEOTECHNICAL DATA

- .1 Not Used.

I.06 EXISTING HAZARDOUS MATERIAL INFORMATION

- .1 Refer to hazardous materials report for information and recommendations including: executive summary, summary of findings, scope of assessment, background information, findings, methodology, limitations, and referenced Federal and Provincial regulations for hazardous materials.
- .2 Hazardous Materials Report:
 - .1 Report title: Hazardous Building Materials Assessment (Preconstruction)
 - .2 Report publication date: February 13, 2026

.3 Report prepared by: Emily Balfour

.1 Address: 151 York Boulevard, Hamilton, ON

.3 A copy of the report is attached at the end of the specifications as Appendix A and is available as a digital file upon request from JASON FUNG ARCHITECT INC..

1.09 DRAWINGS

.1 Not Used.

1.10 RELATED INSTRUCTIONS

.1 Report any irregularities or changed surface conditions at the project site to HWDSB and JASON FUNG ARCHITECT INC. a minimum of 5 days before Bid close.

2 PRODUCTS

2.01 NOT USED

.1 Not Used.

3 EXECUTION

3.01 NOT USED

.1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

I.02 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises general replacement and installation of ceilings of the listed corridors and specified stairwells located at R.A. Riddell Elementary School, 200 Cranbrook Drive, Hamilton, ON L9C 4S9, and further identified in the Contract Documents.

I.03 CONTRACT METHOD

- .1 Construct Work under contract.
- .2 Relations and responsibilities between Contractor and subcontractors assigned by Owner are as defined in the RFT Document.

I.04 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Project construction progress schedule in accordance with 01 32 16.19 - Construction Progress Schedule - Bar (GANTT) Chart.

I.05 WORK BY OTHERS

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from Consultant.
- .2 Co-ordinate work with other contractors. If any part of work under this Contract depends for its proper execution or result upon work of another contractor, report promptly to Consultant and HWDSB, in writing, any defects which may interfere with proper execution of Work.

I.06 FUTURE WORK

- .1 Not Used.

I.07 WORK SEQUENCE

- .1 Construct Work in stages to accommodate Owner's intermittent use of premises during construction.
- .2 Co-ordinate Progress Schedule and co-ordinate with Owner Occupancy during construction.
- .3 Construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.
- .4 Maintain fire access/control.
- .5 Protect workers and public safety.

I.08 CONTRACTOR USE OF PREMISES

- .1 Site Superintendent MUST SIGN IN with school office, Duration of work must be described, complete with timeline of completion. Sign-in and sign-out is required daily for all subtrades. Sign-in sheets will be provided to HWDSB on a monthly basis.

- .2 Refer to Hamilton-Wentworth District School board Construction Site Specific Information Sheet for Work Hours.
- .3 Limit use of premises for Work and for access, to allow:
 - .1 Owner occupancy.
 - .2 Partial owner occupancy.
 - .3 Work by other contractors.
 - .4 Public usage.
 - .5 The school cannot be used as a site office and site trailers are permitted
 - .6 Contractor to provide hoarding, fencing, signage, etc. to facilitate the execution of the work.
 - .7 Contractor is responsible for site security, including the security of materials, equipment, portable toilets, bins, vehicles, etc.
- .4 Co-ordinate use of premises under direction of HWDSB.
- .5 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .6 Coordinate with HWDSB for temporary facilities, access roads and parking areas, traffic regulations, and utilities.
- .7 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .8 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Consultant and HWDSB.
- .9 Ensure that operations conditions of exiting work at completion are still the same, equal to or better than that which existed before new work started.
- .10 Caretaking equipment and supplies are note to be used by the Contractor.

I.09 OWNER OCCUPANCY

- .1 Owner will occupy premises during entire construction period for execution of normal operations.
- .2 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

I.10 PARTIAL OWNER OCCUPANCY

- .1 Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work.
- .2 Designated areas for Owner's occupancy as directed on site.
- .3 Owner will occupy designated areas for purpose of storage of furnishings and equipment and installation of equipment.
- .4 Execute Certificate of Substantial Performance for each designated portion of Work prior to Owner occupancy. Contractor shall allow:
 - .1 Access for Owner personnel.
 - .2 Use of parking facilities.
 - .3 Operation of HVAC and electrical systems.
- .5 On occupancy, Owner will provide for occupied areas:

- .1 Operation of HVAC and electrical systems.
- .2 Maintenance.
- .3 Security.
- .6 Execute Partial Interim Certificate of Completion for each designated portion of Work prior to Owner occupancy. Contractor shall allow:
 - .1 Access for Owner personnel.
 - .2 Use of parking facilities.
 - .3 Operation of HVAC and electrical systems.

1.11 PRE-PURCHASED EQUIPMENT

- .1 Ensure that the purpose for pre-purchasing these equipment is to ensure delivery to Site within required Project completion schedule.
- .2 Obtain necessary shop drawings and proceed to co-ordinate details for installation, expedite, receive, unload, install, connect and test specified equipment, and be responsible for warranty.
- .3 Include equipment specifications for pre-purchased items at end of project specification, printed on coloured paper for confirmation only.
- .4 Notify Consultant and HWDSB in writing at least 5 calendar days in advance of date on which materials and equipment are required.
 - .1 Pick up materials and equipment no later than 10 calendar days after such date.
- .5 Receive equipment Free on Board (F.O.B.), store and maintain equipment until installation.

1.12 OWNER FURNISHED ITEMS

- .1 Owner Responsibilities for Owner Furnished Items only:
 - .1 Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to Contractor.
 - .2 Deliver supplier's bill of materials to Contractor.
 - .3 Arrange and pay for delivery to site in accordance with Progress Schedule.
 - .4 Inspect deliveries jointly with Contractor.
 - .5 Submit claims for transportation damage.
 - .6 Arrange for replacement of damaged, defective or missing items.
 - .7 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties and bonds to Contractor.
- .2 Contractor Responsibilities:
 - .1 Designate submittals and delivery date for each product in progress schedule.
 - .2 Review shop drawings, product data, samples, and other submittals. Submit to Consultant notification of observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - .3 Receive and unload products on Site.
 - .4 Inspect deliveries jointly with Owner; record shortages, and damaged or defective items.
 - .5 Handle products on Site, including uncrating and storage.

- .6 Protect products from damage, and from exposure to elements.
- .7 Assemble, install, connect, adjust, and finish products.
- .8 Provide installation inspections required by public authorities.
- .9 Repair or replace items damaged by Contractor or subcontractor on site (under their control).

I.13 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations, occupants, and normal use of premises. Arrange with Consultant and HWDSB to facilitate execution of work.

I.14 EXISTING SERVICES

- .1 Notify HWDSB and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give HWDSB at least 5 days of notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian, vehicular traffic and building operations.
- .3 Provide alternative routes for personnel, pedestrian and vehicular traffic.
- .4 Establish location and extent of service lines in area of work before starting Work. Notify Consultant and HWDSB of findings.
- .5 Submit schedule for approval by Consultant and HWDSB for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .6 Provide temporary services to maintain critical building and tenant services.
- .7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .8 Where unknown services are encountered, immediately advise Consultant and HWDSB, and confirm findings in writing.
- .9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .10 Record locations of maintained, re-routed and abandoned service lines.
- .11 Construct barriers, as required.

I.15 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy of each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.

- .8 Field Test Reports.
- .9 Copy of Approved Work Schedule.
- .10 Health and Safety Plan and Other Safety Related Documents.
- .11 Other documents as specified.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

I.02 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary “access to” and “egress from” work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

I.03 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with HWDSB to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Access to school washrooms is not permitted. Contractors to provide their own portable restroom units. Location to be provided by Contractor and reviewed and approved by HWDSB via email prior to construction.
- .5 Closures: protect work temporarily until permanent enclosures are completed.

I.04 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations, occupants, and normal use of premises. Arrange with HWDSB to facilitate execution of work.

I.05 EXISTING SERVICES

- .1 Notify, HWDSB and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give HWDSB at least 5 days of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
- .3 Provide for personnel, pedestrian, and vehicular traffic.
- .4 Construct barriers as required.

I.06 SECURITY

- .1 Where security has been reduced by Work of Contract, provide temporary means to maintain security.

I.07 BUILDING SMOKING ENVIRONMENT

- .1 Smoking, vaping, drugs and alcohol are not permitted on school board property. Anyone seen doing these activities will be removed from the property and not allowed to return. Contractor to ensure subcontractor compliance.

2 PRODUCTS

2.01 NOT USED

.1 Not Used.

3 EXECUTION

3.01 NOT USED

.1 Not Used.

END OF SECTION

I GENERAL

I.01 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2, Stipulated Price Contract.

I.02 CASH ALLOWANCES

- .1 Refer to CCDC 2, GC 4.1 and Supplementary conditions.
- .2 Include in Contract Price specified cash allowances.
- .3 The contractor is required to maintain a \$15,000.00 cash allowance specifically designated for the removal and replacement work of alarm systems as required.
- .3 Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage, installation and other authorized expenses incurred in performing Work.
- .4 Contract Price, and not cash allowance, includes Contractor's overhead and profit in connection with such cash allowance.
- .5 Contract Price will be adjusted by written order to provide for excess or deficit to each cash allowance.
- .6 Where costs under a cash allowance exceed amount of allowance, Contractor will be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.
- .7 Include progress payments on accounts of work authorized under cash allowances in Consultant's monthly certificate for payment.
- .8 Prepare schedule jointly with Consultant, HWDSB and Contractor to show when items called for under cash allowances must be authorized by HWDSB for ordering purposes so that progress of Work will not be delayed.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 REFERENCE STANDARDS

- .1 Owner/Contractor Agreement.

I.02 APPLICATIONS FOR PROGRESS PAYMENT

- .1 Refer to CCDC 2 and Supplementary conditions.
- .2 Make applications for payment on account as provided in Agreement monthly as Work progresses.
- .3 Date applications for payment last day of agreed monthly payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work at that date.
- .4 Submit to HWDSB at least 14 days before first application for payment. Schedule of values for parts of Work, aggregating total amount of Contract Price, to facilitate evaluation of applications for payment.

I.03 SCHEDULE OF VALUES

- .1 Refer to CCDC 2 and Supplementary conditions.
- .2 Provide schedule of values supported by evidence as JASON FUNG ARCHITECT INC. may reasonably direct and when accepted by JASON FUNG ARCHITECT INC., be used as basis for applications for payment.
- .3 Include statement based on schedule of values with each application for payment.
- .4 Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as JASON FUNG ARCHITECT INC. may reasonably require to establish value and delivery of products.

I.04 PROGRESS PAYMENT

- .1 Refer to CCDC 2 and Supplementary conditions.
- .2 JASON FUNG ARCHITECT INC. will issue to HWDSB, no later than 10 days after receipt of an application for payment, certificate for payment in amount applied for or in such other amount as Consultant determines to be due. If JASON FUNG ARCHITECT INC. amends application, JASON FUNG ARCHITECT INC. will give notification in writing giving reasons for amendment.

I.05 SUBSTANTIAL PERFORMANCE OF WORK

- .1 Refer to CCDC 2 and Supplementary conditions.
- .2 Prepare and submit to JASON FUNG ARCHITECT INC. comprehensive list of items to be completed or corrected and apply for a review by JASON FUNG ARCHITECT INC. to establish Substantial Performance and Interim Completion of Work or substantial performance of designated portion of Work when Work is substantially performed if permitted by lien legislation applicable to Place of Work designated portion which Owner agrees to accept separately is substantially performed. Failure to include items on list does not alter responsibility to complete Contract.
- .3 No later than 10 days after receipt of list and application, JASON FUNG ARCHITECT INC. will

review Work to verify validity of application, and no later than 7 days after completing review, will notify Contractor if Work or designated portion of Work is substantially performed.

- .4 JASON FUNG ARCHITECT INC.: state date of Substantial Performance of Work or designated portion of Work in certificate.
- .5 Immediately following issuance of certificate of Substantial Performance of Work, in consultation with Consultant, establish reasonable date for finishing Work.

I.06 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF WORK

- .1 Refer to CCDC 2 and Supplementary conditions.
- .2 After issuance of certificate of Substantial Performance of Work:
 - .1 Submit application for payment of holdback amount.
 - .2 Submit sworn statement that accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of Work and for which Owner might in be held responsible have been paid in full, except for amounts properly retained as holdback or as identified amount in dispute.
- .3 After receipt of application for payment and sworn statement, JASON FUNG ARCHITECT INC. will issue certificate for payment of holdback amount.

I.07 FINAL PAYMENT

- .1 Refer to CCDC 2, GC 5.7 and Supplementary conditions.
- .2 Submit application for final payment when Work is completed.
- .3 JASON FUNG ARCHITECT INC. will, no later than 10 days after receipt of application for final payment, review Work to verify validity of application. JASON FUNG ARCHITECT INC. will give notification that application is valid or give reasons why it is not valid, no later than 7 days after reviewing Work.
- .4 JASON FUNG ARCHITECT INC. will issue final certificate for payment when application for final payment is found valid.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

I.02 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work at the call of HWDSB.
- .2 Prepare agenda for meetings.
- .3 Distribute written notice of each meeting four days in advance of meeting date to HWDSB
- .4 Provide physical space and make arrangements for meetings.
- .5 Preside at meetings.
- .6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7 Reproduce and distribute copies of minutes within 3 days after meetings and transmit to meeting participants and, HWDSB, JASON FUNG ARCHITECT INC.
- .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

I.03 PRECONSTRUCTION MEETING

- .1 Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of HWDSB, JASON FUNG ARCHITECT INC., major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 16.19 - Construction Progress Schedule - Bar (GANTT) Chart.
 - .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
 - .5 Delivery schedule of specified equipment.
 - .6 Site security as necessary.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
 - .8 Owner provided products.
 - .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.

- .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.

1.04 PROGRESS MEETINGS

- .1 During course of Work and 2 weeks prior to project completion, schedule progress meetings bi-weekly.
- .2 Contractor, major Subcontractors involved in Work, HWDSB are to be in attendance.
- .3 Notify parties minimum 3 days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 days after meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

I.02 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: overall system operated by HWDSB to enable monitoring of project work in relation to established milestones.

I.03 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 5 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to HWDSB within 10 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to HWDSB within 5 working days of receipt of acceptance of Master Plan.

I.05 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule. Contractor and HWDSB to provide further information.

I.06 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 HWDSB will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

I.07 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Shop Drawings, Samples.
 - .3 Demolition
 - .4 Interior Architecture (Ceiling).
 - .5 Lighting.
 - .6 Electrical.
 - .7 Controls.
 - .8 Heating, Ventilating, and Air Conditioning.
 - .9 Testing and Commissioning.
 - .10 Supplied equipment long delivery items.
 - .11 Engineer supplied equipment required dates.

I.08 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

I.09 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

2 PRODUCTS

2.01 NOT USED

.1 Not used.

3 EXECUTION

3.01 NOT USED

.1 Not used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Not Used.

I.02 REFERENCE STANDARDS

- .1 Not Used.

I.03 ADMINISTRATIVE REQUIREMENTS

- .1 Submit to JASON FUNG ARCHITECT INC. submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals before submission to JASON FUNG ARCHITECT INC.. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify HWDSB and JASON FUNG ARCHITECT INC., in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify site measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by HWDSB and JASON FUNG ARCHITECT INC review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by HWDSB and JASON FUNG ARCHITECT INC. review.
- .10 Keep one reviewed copy of each submission on site.

I.04 SHOP DRAWINGS AND PRODUCT DATA

- .1 Refer to CCDC 2 GC 3.11.
- .2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .3 Submit drawings stamped and signed by professional engineer registered or licensed in ONTARIO, Canada.
- .4 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to Contract drawings and specifications.

- .5 Allow 5 days for HWDSB and JASON FUNG ARCHITECT INC. review of each submission.
- .6 Adjustments made on shop drawings by HWDSB and JASON FUNG ARCHITECT INC. are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to HWDSB before to proceeding with Work.
- .7 Make changes in shop drawings as HWDSB and JASON FUNG ARCHITECT INC. may require, consistent with Contract Documents. When resubmitting, notify HWDSB and JASON FUNG ARCHITECT INC. in writing of revisions other than those requested.
- .8 Accompany submissions with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data, and sample.
 - .5 Other pertinent data.
- .9 Submissions to include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of site measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified site dimensions and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .10 After HWDSB and JASON FUNG ARCHITECT INC. review, distribute copies.
- .11 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as HWDSB and JASON FUNG ARCHITECT INC. may reasonably request.
- .12 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by HWDSB and JASON FUNG ARCHITECT INC. where shop drawings will not be prepared due to standardized manufacture of product.

- .13 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by HWDSB and JASON FUNG ARCHITECT INC.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of Contract award for project.
- .14 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by HWDSB and JASON FUNG ARCHITECT INC.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of Contract complete with project name.
- .15 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by HWDSB and JASON FUNG ARCHITECT INC.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.
- .16 Submit electronic copies of Manufacturer's Site Reports for requirements requested in specification Sections and as requested by HWDSB and JASON FUNG ARCHITECT INC.
- .17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .18 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by HWDSB.
- .19 Delete information not applicable to project.
- .20 Supplement standard information to provide details applicable to project.
- .21 If upon review by HWDSB and JASON FUNG ARCHITECT INC no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

I.05 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to HWDSB and JASON FUNG ARCHITECT INC
- .3 Notify HWDSB and JASON FUNG ARCHITECT INC. in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by HWDSB and JASON FUNG ARCHITECT INC. are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to HWDSB and JASON FUNG ARCHITECT INC. before proceeding with Work.
- .6 Make changes in samples which HWDSB and JASON FUNG ARCHITECT INC may require, consistent with Contract Documents.

- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.06 MOCK-UPS

- .1 Erect mock-ups in accordance with section 01 43 00 - Quality Assurance.

1.07 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution weekly with progress statement and as directed by HWDSB.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: 2 views per ceiling zone as specified in Architectural drawings.
 - .1 Viewpoints and their location as determined by HWDSB or JASON FUNG ARCHITECT INC..
- .4 Frequency of photographic documentation: weekly as directed by HWDSB.
 - .1 Upon completion of: demolition, framing and services before concealment, and as directed by HWDSB or JASON FUNG ARCHITECT INC..

1.08 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit WSIB Clearance Certificate.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 Refer to Hazardous Building Materials Assessment (Pre-construction) report prepared by PINCHIN LTD. before proceeding with demolition and renovation Work.

I.02 RELATED REQUIREMENTS

- .1 Section 02 81 00 - Hazardous Materials.

I.03 REFERENCE STANDARDS

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Ontario
 - .1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O.

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to HWDSB, and authority having jurisdiction.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS Safety Data Sheets (SDS) in accordance with Section 02 81 00 - Hazardous Materials.
- .7 HWDSB will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to HWDSB within 5 days after receipt of comments from HWDSB.
- .8 HWDSB review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to HWDSB.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

I.05 FILING OF NOTICE

- .1 File Notice of Project with Ontario authorities prior to beginning of Work.

- .2 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

I.06 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

I.07 MEETINGS

- .1 Schedule and administer Health and Safety meeting prior to commencement of Work.

I.08 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

I.09 PROJECT/SITE CONDITIONS

I.10 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 HWDSB may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

I.11 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

I.12 COMPLIANCE REQUIREMENTS

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. and Ontario Regulations for Construction Projects, O. Reg. 213 / 91
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

I.13 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Ontario having jurisdiction and advise HWDSB and in writing.

I.14 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:

- .1 Have site-related working experience specific to activities associated with HWDSB.
- .2 Have working knowledge of occupational safety and health regulations.
- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of Work and report directly to and be under direction of HWDSB.

I.15 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Ontario having jurisdiction, and in consultation with HWDSB.

I.16 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by HWDSB.
- .2 Provide HWDSB with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 HWDSB may stop Work if non-compliance of health and safety regulations is not corrected.

I.17 BLASTING

- .1 Blasting or other use of explosives is not permitted.

I.18 POWDER ACTUATED DEVICES

- .1 Use powder actuated devices only after receipt of written permission from HWDSB.

I.19 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 This Section references laws, bylaws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction (AHJ), and other legally enforceable requirements applicable to the Work and that are or become enforced during performance of the Work.

I.02 RELATED REQUIREMENTS

- .1 Section 02 22 10 – Existing Conditions Assessment

I.03 DEFINITIONS

- .1 Reference Standards: Means consensus standards, trade association standards, guides, and other publications expressly referenced in the Contract Documents.

I.04 REFERENCE STANDARDS AND REFERENCE DOCUMENTS

- .1 If specified referenced standards do not indicate an edition or version, the latest edition or revision issued by the publisher at the time of bid closing shall apply, except as follows:
 - .1 If a particular edition or revision date of a specified standard is referenced in an applicable code or other regulatory requirement, the edition or version in the regulatory reference shall apply.
- .2 The specified reference standards establish minimum requirements. If Contract Documents indicate requirements that conflict with a reference standard, the more stringent requirements shall apply.
- .3 If multiple reference standards are specified and the standards establish different requirements, the most stringent requirement shall apply.
- .4 In case of discrepancy or uncertainties, refer to JASON FUNG ARCHITECT INC. for interpretation or clarification.

I.05 CODES

- .1 Building Code: Perform Work in accordance with the Ontario Building Code 2024 including amendments up to the time of bid closing and other codes of provincial or local application.
- .2 Fire Code: Perform Work in accordance with the National Fire Code of Canada (NFC) including amendments up to the time of bid closing and other codes of provincial or local application.
- .3 Plumbing Code: Perform Work in accordance with National Plumbing Code including amendments up to the time of bid closing and other codes of provincial or local application.
- .4 If there is a conflict or discrepancy between codes, the most stringent requirements shall apply.
- .5 Specific design and performance requirements listed in Specifications and indicated on Drawings may exceed minimum requirements established by referenced Codes; these requirements will govern over the minimum requirements listed in the referenced Codes.

I.06 LAWS

- .1 Not Used.

1.07 FEES

- .1 Regulatory Requirements: Except as otherwise specified, JASON FUNG ARCHITECT INC. shall apply for, obtain, and pay fees associated with permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:
 - .1 Regulatory requirements and fees in force at the time of bid closing, and
 - .2 A change in regulatory requirements or fees scheduled to become effective after the time of bid closing and of which public notice has been given before the time of bid closing.

2 PRODUCTS

2.01 EASEMENTS AND NOTICES

- .1 Not Used.

2.02 PERMIT REQUIREMENTS

- .1 Building Permit:
 - .1 JASON FUNG ARCHITECT INC. shall apply for, obtain and pay for building permit on behalf of HWDSB, and other permits required for Work and its various parts.
 - .3 Contractor will require that specific Subcontractors obtain and pay for some permits required by authorities having jurisdiction (AHJ), where their work is affected by work requiring permits including an asbestos abatement and control permit.
 - .4 Contractor shall display building permit and other permits in a conspicuous location at the Place of the Work.
- .3 Occupancy Permits:
 - .1 Contractor shall apply for, obtain, and pay for occupancy permits, including partial occupancy permits where required by AHJ.
 - .2 Contractor shall correct deficiencies in accordance with JASON FUNG ARCHITECT INC.'s instructions. If a deficiency is not corrected, HWDSB reserves the right to make correction and charge Contractor for costs incurred.
 - .3 Contractor shall turn occupancy permits over to HWDSB.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 This Section describes administrative and procedural requirements for reactive activities to verify that completed Work conforms to Contract Documents requirements.
- .2 Having inspection and testing agencies by Contractor does not relieve the Contractor of their responsibility to perform Work in accordance with Contract Documents.

I.02 RELATED REQUIREMENTS

I.03 ADMINISTRATIVE REQUIREMENTS

- .1 Allow and coordinate access to Work on site, manufacturing off site, and fabrication off site with inspection and testing agencies.
- .2 Retain and pay for inspection and testing that are designated for Contractor's own quality control plan, and when testing and inspection are required by Consultant or Sub consultants.
- .3 Give advanced notice to HWDSB and to each inspection/testing agency for inspection and testing required by Contract Documents or by Consultant or Sub consultants..
- .4 In advance of each test, notify appropriate agency and HWDSB in the order that attendance arrangements can be made.

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit schedule of testing and inspection activities to HWDSB, applicable Subcontractors, testing agencies, and other affected parties. Include the following:
 - .1 List each testing and inspection agency
 - .2 Identify types of tests and inspections for each agency, and cross reference to applicable specification Section number-title in Contract Documents
 - .3 Description of test and inspection
 - .4 Identify applicable reference standard
 - .5 Identify test and inspection method
 - .6 Indicate number of each test and inspection required
- .3 Submit one digital copy of each quality assurance inspection and test report to HWDSB, except where a technical specification Section indicates otherwise.
- .4 Submit reports for inspection and testing required by Contract Documents or by Consultant or Sub consultants and performed by Contractor-retained inspection and testing agencies within 10 days after inspection or test is completed, except where a technical specification Section indicates a different time period.
- .5 Submit one digital copy of each quality control inspection and test report to HWDSB, except where a technical specification Section indicates otherwise.
- .6 Deliver copies of quality control reports to Subcontractor of work being inspected or tested.

I.05 SOURCE QUALITY CONTROL PROCEDURES

I.06 SITE QUALITY CONTROL PROCEDURES

- .1 Provide labour, Construction Equipment, and temporary facilities to obtain and handle test samples and materials on site. Arrange for sufficient space to store and cure test samples.
- .2 Deliver samples and materials required for testing, as requested in technical specification Sections. Submit with reasonable promptness and in an orderly sequence to avoid delays in Work.

I.07 TESTING AND INSPECTION SERVICES

- .1 Provide equipment required for executing inspection and testing by appointed agencies.
- .2 Correct defects and deficiencies when they are revealed during inspection or testing at no change to Contract Price or Contract Time. Pay costs for retesting and re-inspection. Appointed agency will request additional inspections or tests to ensure full degree of defects or deficiencies are revealed and corrected.
- .3 Quality control testing and inspection reports to include the following:
 - .1 Project name and number
 - .2 Testing/Inspection agency's name, address, telephone number, and website
 - .3 Date of issuing report
 - .4 Dates and locations of tests, inspections, or samples
 - .5 Description of the Work and test and inspection method
 - .6 Numbers and titles of associated specification Sections
 - .7 Test and inspection data and interpretation of test results (e.g., pass or fail)
 - .8 Ambient conditions at time of test, inspection, or sampling
 - .9 Recommendations on re-testing and re-inspecting, if applicable

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Section 02 80 00 – Hazardous Materials.

I.02 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2, Stipulated Price Contract.

I.03 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by HWDSB. Do not burn waste materials on site, unless approved by HWDSB.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site 40 yard bin containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling.
- .7 Dispose of waste materials and debris off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

I.04 FINAL CLEANING

- .1 Refer to CCDC 2, GC 3.14 , and any other applicable supplementary conditions in the Contract Documents.
- .2 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .4 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste products and debris including that caused by Owner or other Contractors.

- .6 Remove waste materials from site at regularly scheduled times or dispose of as directed by HWDSB. Do not burn waste materials on site, unless approved by HWDSB.
- .7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .10 Clean lighting reflectors, lenses, and other lighting surfaces.
- .11 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .13 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .14 Remove dirt and other disfiguration from exterior surfaces.
- .15 Sweep and wash clean paved areas.
- .16 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .17 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .18 Remove snow and ice from access to building.

1.05 WASTE MANAGEMENT AND DISPOSAL

- .1 Not used.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Not Used.

I.02 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2, Stipulated Price Contract.

I.03 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection:
 - .1 Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .2 Notify HWDSB in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .3 Request HWDSB and JASON FUNG ARCHITECT INC. inspection.
 - .2 HWDSB and JASON FUNG ARCHITECT INC. Inspection:
 - .1 HWDSB, JASON FUNG ARCHITECT INC. to inspect Work with Contractor and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed and submit verification that corrections have been made.
 - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Equipment and systems: tested, adjusted and balanced and fully operational.
 - .4 Certificates required by Boiler Inspection Branch, Fire Commissioner, Utility companies: submitted.
 - .5 Operation of systems: demonstrated to Owner's personnel.
 - .6 Commissioning of mechanical systems: completed and copies of final Commissioning Report submitted to HWDSB and JASON FUNG ARCHITECT INC.
 - .7 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by HWDSB and JASON FUNG ARCHITECT INC., and Contractor.
 - .2 When Work incomplete according to HWDSB and JASON FUNG ARCHITECT INC., complete outstanding items and request re-inspection.
 - .5 Declaration of Substantial Performance: When HWDSB and JASON FUNG ARCHITECT

INC. considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.

- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .7 Final Payment:
 - .1 When HWDSB and JASON FUNG ARCHITECT INC. considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
 - .2 Refer to CCDC 2: when Work deemed incomplete by HWDSB and JASON FUNG ARCHITECT INC., complete outstanding items and request re-inspection.
- .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.04 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 00 - Cleaning.
- .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Not Used.

I.02 REFERENCE STANDARDS

- .1 Canadian Environmental Protection Act (CEPA):
 - .1 Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations

I.03 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week before contract completion with Contractor and HWDSB, in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify Project requirements.
 - .2 Review manufacturer's installation instructions and warranty requirements.
 - .2 HWDSB to establish communication procedures for:
 - .1 Notifying construction warranty defects.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two weeks before Substantial Performance of the Work, submit to the HWDSB, two copies of operating and maintenance manuals in English.
- .3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.

I.05 FORMAT

- .1 Organize data as instructional manual.
- .2 PDF: Letter size, flattened, Black & White.
- .3 When multiple PDFs are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder in file name.
- .4 Cover: Identify each PDF with type or printed title 'Project Record Documents'; list title of project

and identify subject matter of contents.

- .5 Arrange content by systems under Section numbers and sequence of Table of Contents.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: Provide PDF copy.
 - .1 Bind in with text.

I.06 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Table of Contents for Each Volume: provide title of project;
 - .1 Date of submission; names.
 - .2 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
 - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: As required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.
- .6 Warranty Letters.

I.07 AS-BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for HWDSB one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Site test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in site office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.

- .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by HWDSB.

I.08 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

- .1 Record information on set of black line opaque drawings, and provide reline as-built drawings in PDF format.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Site changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 Referenced Standards to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: Maintain manufacturer's certifications, inspection certifications, site test records, required by individual specifications Sections.
- .7 Provide digital photos, if requested, for site records.

I.09 FINAL SURVEY

- .1 Submit final site survey certificate, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

I.10 EQUIPMENT AND SYSTEMS

- .1 For each item of equipment and each system include description of unit or system, and component parts.
 - .1 Give function, normal operation characteristics and limiting conditions.
 - .2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
 - .1 Include regulation, control, stopping, shut-down, and emergency instructions.
 - .2 Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control.
- .15 Additional requirements: As specified in individual specification Sections.

I.11 MATERIALS AND FINISHES

- .1 Building products, applied materials, and finishes: Include product data, with catalogue number, size, composition, and colour and texture designations.
 - .1 Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and weather-exposed products: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional requirements: As specified in individual specifications Sections.

I.12 MAINTENANCE MATERIALS

- .1 Spare Parts:
 - .1 Provide spare parts, in quantities specified in individual specification Sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to HWDSB.
 - .2 Include approved listings in Maintenance Manual.

- .5 Obtain receipt for delivered products and submit before final payment.
- .2 Extra Stock Materials:
 - .1 Provide maintenance and extra materials, in quantities specified in individual specification Sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to HWDSB.
 - .2 Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit before to final payment.
- .3 Special Tools:
 - .1 Provide special tools, in quantities specified in individual specification Section.
 - .2 Provide items with tags identifying their associated function and equipment.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to HWDSB.
 - .2 Include approved listings in Maintenance Manual.

I.13 DELIVERY, STORAGE, AND HANDLING

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and for review by HWDSB.

I.14 WARRANTIES AND BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to HWDSB approval.
- .3 Warranty management plan to include required actions and documents to assure that HWDSB receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to HWDSB for approval before each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of

responsible principal.

- .3 Obtain warranties and bonds, executed in duplicate by Subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
- .4 Verify that documents are in proper form, contain full information, and are notarized.
- .5 Co-execute submittals when required.
- .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Conduct joint 11 month warranty inspection, measured from time of acceptance, by HWDSB.
- .9 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, Subcontractors, manufacturers, or suppliers involved.
 - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include HVAC balancing, motors, and commissioned systems such as fire protection, alarm systems, sprinkler systems.
 - .3 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.
 - .2 Model and serial numbers.
 - .3 Location where installed.
 - .4 Name and phone numbers of manufacturers or suppliers.
 - .5 Names, addresses and telephone numbers of sources of spare parts.
 - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .7 Cross-reference to warranty certificates as applicable.
 - .8 Starting point and duration of warranty period.
 - .9 Summary of maintenance procedures required to continue warranty in force.
 - .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
 - .11 Organization, names and phone numbers of persons to call for warranty service.
 - .12 Typical response time and repair time expected for various warranted equipment.
 - .4 Contractor's plans for attendance at 9 month post-construction warranty inspections.
 - .5 Procedure and status of tagging of equipment covered by extended warranties.
 - .6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .10 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification to follow oral instructions.
 - .1 Failure to respond will be cause for the HWDSB to proceed with action against Contractor.

1.15 WARRANTY TAGS

- .1 Tag, at time of installation, each warranted item. Provide durable, oil- and water-resistant tag approved by HWDSB.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of acceptance until project is accepted for occupancy.
- .4 Indicate the following information on tag:
 - .1 Type of product/material.
 - .2 Model number.
 - .3 Serial number.
 - .4 Contract number.
 - .5 Warranty period.
 - .6 Inspector's signature.
 - .7 Construction Contractor.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

.1 Not Used.

I.02 ABBREVIATIONS AND ACRONYMS

.1 Not Used.

I.03 DEFINITIONS

- .1 Refer to ASTM E361 for terms definitions as they are applicable to this Project.
 - .1 Building Conditions Assessment (BCA):
 - .2 Life Expectancy:
 - .3 Estimated Remaining Life:
 - .4 Effective Age:
 - .5 Cost Estimates:
 - .6 Capital Work:
 - .7 Life Span:
 - .8 Good Condition:
 - .9 Fair Condition:
 - .10 Poor Condition:
 - .11 Life Safety:
 - .12 Structural Integrity:
 - .13 Legislative Authority:
 - .14 Building Functionality:

I.04 REFERENCE STANDARDS

- .1 ASTM International (ASTM):
 - .1 ASTM E631-15, Standard Terminology of Building Constructions
 - .2 ASTM E2018-15, Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process
- .2 National Research Council of Canada (NRC):
 - .1 National Building Code of Canada (NBC)
 - .2 National Fire Code of Canada (NFC)
- .3 Ontario Building Code 2024

I.05 ADMINISTRATIVE REQUIREMENTS

- .1 Arrange for a pre-construction meeting in accordance with Section 01 31 19 - Project Meetings. Meeting to be attended by HWDSB and JASON FUNG ARCHITECT INC. to discuss project's requirements before Work starts.

1.06 RESPONSIBILITY

- .1 Contractor shall exercise every reasonable precaution for the protection of each worker on Site.
- .2 Contractor shall furnish all existing building information to all subcontractors who will be performing work on Site.

1.07 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.
- .2 Refer to laws, by laws, ordinances, rules, regulations, and orders of authority having jurisdictions, and other legally enforceable requirements applicable to Work at that area; or become in force during performance or work.

1.08 QUALIFICATIONS

- .1 Provide proof of qualifications when requested by HWDSB.

1.10 SITE INFORMATION

- .1 Site located at R.A Riddell Elementary School, 200 Cranbrook Drive, Hamilton ON L9C 4S9, features one existing building.

1.11 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Site specific Health and Safety Plan, within 7 days after date of Notice to proceed and before mobilization to Site. List any relevant hazards present on Site and need to be included in the Contractor's Site specific Health and Safety plan as required by authority having jurisdiction.
 - .1 Prepare Site specific Health and Safety Plan in accordance with Section 01 35 29.06 - Health and Safety Requirements, refer to any findings of Site specific Designated Substance Reports (DSR), overhead protection and hoarding requirements, roof anchorage testing reports, and building fire evacuation plans.

2 PRODUCTS

2.01 Not Used

- .1 Not Used.

3 EXECUTION

3.01 EXAMINATION

- .1 Conduct a site visit to examine existing site conditions.
- .2 Before Work starts, verify existing Site and building(s) conditions.

3.02 VERIFICATION OF CONDITIONS

- .1 Assess any on-Site unknown conditions observed through Site walk-through and discuss with HWDSB should any extra work be required beyond the Contract scope of work.
- .2 Notify HWDSB should any extra work beyond the scope of work under this Contract be required, due to hidden and unknown conditions observed upon Contractor Site observation.
 - .1 Do not proceed with any extra work without obtaining HWDSB written approval.
- .3 Contractor to verify and compare the current conditions of each of the following Site components:
 - .1 Current Site conditions, including: driveways, parking lots, sidewalks, fencing, handrails, exterior stairs, retaining walls, planting and landscaping.
 - .2 Building Structure: walls, columns, floor slabs.
 - .3 Building Exteriors: exterior walls, windows, cladding, caulking, sealants.
 - .4 Building Interior: walls, floors, ceilings, equipment, painting.
 - .5 Electrical Systems: distribution panels, transformers, door systems, fans.
 - .6 Lighting Systems: emergency lighting, exterior lighting system, interior lighting systems.
 - .7 Mechanical Systems: heating and cooling, ventilation, exhaust, air-conditioning.
 - .8 Plumbing Systems: plumbing fixtures, domestic water supply and distribution, sanitary waste sewer, stormwater sewer, roof drains.
 - .9 Fire Protection Systems: fire alarm, sprinklers.

3.03 PROTECTION OF IN-PLACE CONDITIONS

- .1 Provide in-place protection should the current verified Site conditions be considered unsafe in accordance with the requirements of the Site specific Health and Safety Plan, and to protect on-Site personnel and ensure Site safety during all times of work execution.
- .2 Handle, store and dispose flammable materials on site in a safe manner in accordance with NFC requirements
- .3 Notify HWDSB of any identified potential risks due to onsite obstacles.
 - .1 Do not remove any obstacles before obtaining HWDSB written approval.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 Section Includes:
 - .1 Demolition and disposal of select building items.
 - .2 Removal and reinstallation of select building items.
 - .3 Removal and turning over to the Owner, of select building.
 - .4 Repair and restoration work after completion of work of this Section.

I.02 RELATED REQUIREMENTS

- .1 Not Used.

I.03 DEFINITIONS

- .1 Hazardous Materials: Products, mixtures, materials, or substances classified as physical hazards or health hazards in accordance with Schedule 2 of the Hazardous Products Act.

I.04 REFERENCE STANDARDS

- .1 CSA Group (CSA):
 - .1 CSA Z783, Deconstruction of Buildings and Their Related Parts
- .2 Department of Justice Canada:
 - .1 Hazardous Products Act

I.05 ADMINISTRATIVE REQUIREMENTS

- .1 Coordinate work of this Section with:
 - .1 Hazardous Building Materials Assessment (Pre-construction) report prepared by Pinchin Ltd.
 - .2 Section 25 05 05 Selective Demolition for Electrical.
- .2 Pre-Demolition Meetings: Conduct site meeting in accordance with Section 01 31 19 – Project Meetings and attended by the HWDSB and related Subcontractors to:
 - .1 Verify project requirements, including existing construction conditions affected by work of this Section, scope of selective demolition work, demolition sequencing, and protection of in-place conditions.
 - .2 Review scheduling of utility disruptions that may affect building occupants.
 - .3 Coordinate with other Subcontractors.
- .3 Scheduling:
 - .1 Maintain project schedule without compromising specified minimum material diversion rates.
 - .2 Notify the HWDSB of unforeseen delays, in writing.

I.06 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

- .2 Submit the following action submittals before starting work of this Section:
 - .1 Schedule of Demolition Activities: in accordance with Section 01 32 16.19 - Construction Progress Schedule - Bar (GANTT) Chart.
- .3 Submit the following when requested by the HWDSB:
 - .1 Qualification statements: Information about companies and personnel indicating their experience and capabilities to perform demolition work; include lists of completed projects with project names and addresses, and names and addresses of consultants for work of similar complexity and extent.
- .5 Submit copies of the following, when required by the authority having jurisdiction:
 - .1 reviewed shop drawings;
 - .2 reviewed demolition procedures.

1.07 QUALITY ASSURANCE

- .1 Licensed Professional Qualifications: In accordance with Section 01 43 00 – Quality Assurance.

1.08 SITE CONDITIONS

- .1 Hazardous Materials are listed in HBMA report. Contractor to review report and account to remediation.
- .2 Review the hazardous materials assessment in accordance with Section 00 31 00 – Available Project Information.
- .3 Stop work immediately and take preventative measures if material resembling spray- or trowel-applied asbestos or other Hazardous Materials are encountered.
 - .1 Notify the HWDSB immediately.
 - .2 Proceed with Work after receipt of written instructions from the HWDSB.

2 PRODUCTS

2.01 MATERIAL OWNERSHIP

- .1 Coordinate material ownership with the HWDSB
 - .1 The Owner will retain ownership of:
 - .1 items to remain;
 - .2 items to be re-used;
 - .3 items to be re-installed;
 - .4 items to be removed and turned over to the HWDSB
 - .5 historic items, relics, and similar objects;
 - .6 cornerstones and their contents;
 - .7 commemorative plaques and tablets;
 - .8 antiques;
 - .9 other items of interest or value to the Owner that may be encountered during demolition.

- .2 Take possession of demolished materials and remove from site.

2.02 REPAIR MATERIALS

- .1 Use repair materials identical to existing materials.
 - .1 If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces as closely as possible.
 - .2 Use materials whose installed performance equals or surpasses that of existing materials.

3 EXECUTION

3.01 EXAMINATION

- .1 Review existing conditions and coordinate with indicated requirements to determine extent of demolition required.
- .2 Review record documents of existing facility available from HWDSB.
- .3 HWDSB does not guarantee record documents are accurate, complete, or appropriate.
- .4 Inventory and record the condition of items being removed and turned over to HWDSB. Promptly submit a written report to HWDSB.
- .5 When unforeseen structural, mechanical, electrical, or other issues are encountered that interfere with demolition or removal, investigate and measure the nature and extent of the interference. Promptly submit a written report to HWDSB.
- .6 Perform an engineering review of building conditions to determine whether removing any element might result in structural deficiency, deformation, or unplanned collapse of any portion of the building or structure, or adjacent buildings or structures, during demolition operations.
- .7 Verify Hazardous Materials have been abated or remediated before proceeding with work of this Section.

3.02 PREPARATION

- .1 Protection of In-Place Conditions:
 - .1 Use methods, certified by a qualified licensed professional to prevent movement, settlement, or damage to adjacent properties and buildings, landscaping to remain in place. Provide temporary bracing and shoring as required.
 - .2 Minimize noise, dust, vibration, and inconvenience to occupants in accordance with Section 01 14 00 – Work Restrictions. Provide temporary negative air pressure in demolition areas relative to adjacent occupied areas.
 - .3 Protect building systems, utilities, equipment, landscaping, and other items to remain.
 - .4 Provide temporary dust screens, covers, railings, supports, and other protection.
 - .5 Protect interior items exposed to the weather.
 - .6 Maintain access to egress, walkways, corridors, exits, and other adjacent occupied or partially-occupied facilities, unless approved, in writing.
 - .1 Submit copy of written approval.

3.03 [DEMOLITION AND REMOVAL REQUIREMENTS

- .1 Demolish or remove select building items in accordance with CSA Z783.

3.04 DEMOLITION

- .1 Demolish items as indicated on the Drawings.

3.05 REMOVE AND REINSTALL

- .1 Remove items indicated on the Drawings.
- .2 Examine removed items. Confirm HWDSB's acceptance for reinstallation if removed items appear in poor condition.
- .3 Temporarily store, protect, and prepare removed items for re-use.
- .4 Reinstall removed items as indicated on the Drawings.

3.06 REMOVE AND SALVAGE

- .1 Remove items indicated on the Drawings.
- .2 Store and protect removed items where acceptable to HWDSB. Turn over removed items to HWDSB unless otherwise notified.

3.07 REPAIRS AND RESTORATION

- .1 Promptly repair damage to adjacent construction caused by work of this Section. Patch existing surfaces to make suitable for new materials.
- .2 Restore exposed finishes on patched surfaces. Extend restoration to adjoining construction to eliminate evidence of patching and refinishing.

END OF SECTION

PART 1 GENERAL

1.1 General and Related Work

- .1 Read this Section in conjunction with all drawings and all other Sections so as to comply with the requirements of the General Conditions of the Contract.
- .2 Related work specified elsewhere:
 - .1 Section 02 82 00.02 Asbestos Abatement – Type 2 Procedures
- .3 Site Conditions identifies all known hazardous building materials within the Project Area. The information provided is for general reference only. It is recommended each contractor confirm existing conditions on site prior to tender close.
 - .1 The specification fulfils the requirements of Section 30 of the Ontario Occupational Health and Safety Act.
 - .2 The specification fulfils the requirements of the Section 10 of Ontario Regulation 278/05.
- .4 The Outline of Work identifies the location, condition and quantities of hazardous building materials to be removed as part of this project.
 - .1 It is the intent that work prescribed this Section will result in the removal of all hazardous materials as outlined and the decontamination of all surfaces or materials which may have been or become contaminated by hazardous materials either during or prior to work of this Contract.

1.2 Site Conditions

- .1 Refer to the report entitled “Hazardous building Materials Assessment (Preconstruction), Corridor Ceiling Replacement Project, R.A. Riddell Elementary School, 200 Cranbrook Drive, Hamilton, Ontario”, dated February 13, 2026, prepared by Pinchin Ltd., file number 352293.016.

1.3 Outline of Work

- .1 Coordinate the following items with the Owner’s Project Manager and the Construction Manager, which are to be included in the abatement contractor’s scope of work, including but not limited to: electrical isolations, GFI connection, water connections, HVAC and exhaust ventilation system isolation, bin placement, schedule, disconnects, etc.
- .2 Refer to the Contract Drawings for the extent of construction work and the Work Areas.
- .3 Install Hoarding Walls between Abatement Work Areas and Occupied Areas as required.
- .4 Using Type 2 procedures prescribed in the Section identified in Related Work, perform the following work:

- .1 Remove exiting and install new light fixtures, electrical conduit, signs, ceiling tile grids and any other ceiling mounted items where asbestos-containing plaster, textured plaster, and drywall with asbestos-containing joint compound will be disturbed.
- .2 Remove plaster debris from ceiling in Corridor 129 (Loc 9076, 10 SF). Remove damaged plaster (8 SF) and seal exposed plaster with lagging compound.
- .5 Using Glove Bag procedures, outlined in the O. Reg. 278/05, remove and dispose of asbestos-containing pipe insulation where discovered during ceiling demolition (allow for 20 units). Reinsulate with fiberglass and ASJ jacketing.
- .6 Follow mercury procedures when removing all light fixtures and fluorescent light tubes. Place all light fixtures into containers to avoid breakage and recycle.
- .7 Refer to Specification Sections identified in the Related Work for specified personnel protective measures for the safe handling, removal, clean-up, enclosure, or repair of hazardous materials in each phase or work area.
- .8 Protect surfaces, building fabrics and items remaining within the Abatement Work Area.
- .9 Without disturbing hazardous materials, perform removals where required, prior to abatement work.
- .1 Maximize waste diversion by use of resale of building materials, or recycling.
- .10 Isolate the Abatement Work Area from adjoining Occupied and Non-Occupied Areas whether present at an interior or exterior location.
- .11 Maintain emergency and fire exits from Abatement Work Area, or establish alternative exits satisfactory to Provincial Fire Marshall and local authorities having jurisdiction. Maintain extra routes from occupied areas. Place emergency exit signs at locations to clearly mark exit route. Seal emergency exit doors so as not to impede use of door during emergency evacuation.
- .12 Remove, clean, store and replace at completion of work, non-operating mechanical and electrical equipment, ducts, building components, materials or items removed to accommodate asbestos removal.
- .13 Remove and dispose of as appropriate waste, building components, materials and items contaminated by hazardous materials that cannot be effectively cleaned.
- .14 Encapsulate remaining hazardous materials at locations where removal is deemed impractical by the Abatement Consultant.
- .15 Encapsulation will not be permitted where removal of building materials or structures scheduled for demolition will facilitate access to the asbestos materials in question.
- .16 Final clean work area to remove visible signs of asbestos and other hazardous materials, other debris or settled dust.

- .17 Apply lock-down agent to exposed surfaces throughout the work area and to surfaces from which any hazardous materials have been removed.
 - .1 Do not apply lock-down to materials which would be damaged by its application.
- .18 Unless otherwise specified, the handling, removal, clean-up or repair of hazardous materials or surfaces contaminated with hazardous materials is to be performed following wet removal techniques.

1.4 Schedule

- .1 Provide necessary manpower, supervision, equipment and materials to maintain and complete the project on schedule.
- .2 Work Hours:
 - .1 Coordinate all work, scheduling and phasing with the Owner.
 - .2 Duration for which HVAC systems may remain shutdown to accommodate quiet hours work will vary in accordance with outside weather conditions and internal demand. Duration of quiet hours work will have to be scheduled accordingly and in consultation with the Abatement Consultant and Owner.
- .3 Provide 48 hours written notice to the Abatement Consultant of any request to work outside normal working hours. Obtain written approval before proceeding.

1.5 Definitions

- .1 Abatement Consultant: Owner's Representative providing inspection and air monitoring.
- .2 Abatement Contractor: Contractor or sub-contractor performing work of this section.
- .3 Abatement Work Area: Area where work takes place which will, or may, disturb hazardous materials.
- .4 Amended Water: Water with wetting agent added for the purpose of reducing surface tension to allow thorough wetting of materials.
- .5 Asbestos: Any of the fibrous silicates defined in Regulation 278/05 including: actinolite, amosite, anthophyllite, chrysotile, crocidolite and tremolite.
- .6 Asbestos-Containing Material (ACM): Material identified under Site Conditions including any debris, overspray, fallen material and settled dust.
- .7 Authorized Visitors: Building Owner, Abatement Consultant, or designated representative, and persons representing regulatory agencies.
- .8 Competent Worker: A worker who is qualified because of knowledge, training and experience to perform the work, is familiar with Regulation 278/05 and the Occupational Health and Safety Act, and has knowledge of the potential or actual danger to health and safety in the work.

- .9 Contaminated Waste: Material identified under Site Conditions, including fallen material, settled dust, other debris and materials or equipment deemed to be contaminated by the Abatement Consultant.
- .10 Curtained Doorway: Doorway consisting of two (2) overlapping flaps of rip-proof polyethylene arranged to permit ingress and egress from one room to another while permitting minimal air movement between rooms.
- .11 DOP Test: A testing method used to determine the integrity of the Negative Pressure unit or vacuum using a Dispersed Oil Particulate (DOP) or Poly Alpha Olefin (PAO) HEPA filter leak test. This test is to be conducted on site where units are to be installed. Refer to the Environmental Abatement Council of Canada (EACC) DOP/PAO Testing Guideline 2013 or ANSI/ASME N510-2007.
- .12 Friable Material: Material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .13 HEPA: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.
- .14 Mercury Waste: Equipment, materials or items containing mercury or contaminated with mercury.
- .15 Milestone Inspection: Inspection of the Abatement Work Area at a defined point in the abatement operation.
- .16 Non-Friable Material: Material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .17 Occupied Area: Any area of the building or adjoining space outside the Abatement Work Area.
- .18 Personnel: All Contractor's employees, sub-contractors employees, supervisors.
- .19 PCM: Phase Contrast Microscopy.
- .20 Remove: Remove means remove and dispose of (as applicable type of waste) unless followed by other instruction (e.g. remove and turn over to Owner).
- .21 TEM: Transmission Electron Microscopy.

1.6 Regulations and Guidelines

- .1 Comply with Federal, Provincial, and local requirements, provided that in any case of conflict among those requirements or with these Specifications, the more stringent requirements shall apply. Work shall be performed under regulations in effect at the time work is performed.
- .2 Where regulations are not present, follow accepted industry standards and applicable Guideline documents.

- .3 Regulations and Guidelines include but are not limited to the following:
 - .1 Ministry of Labour Occupational Health and Safety Act Regulations for Construction Projects including Revised Statutes of Ontario 1990, Chapter 0.1 and Ontario Regulation 278/05.
 - .2 Ministry of the Environment and Climate Change Regulation for the disposal of waste, including R.R.O. 1990, Reg. 347 as amended.
 - .3 PCB Regulations, SOR 2008-273 and R.R.O. 1990, Reg 362.
 - .4 Regulation 490/09 Designated Substances.
 - .5 Environmental Abatement Council of Canada (EACC), Lead Guideline For Construction, Renovation, Maintenance or Repair, October 2014.
 - .6 Ministry of Labour, Guideline, Silica on Construction Projects, 2011.

1.7 Quality Assurance

- .1 Removal and handling of hazardous materials is to be performed by persons trained in the methods, procedures and industry practices for Abatement.
- .2 Ensure work proceeds to schedule, meeting all requirements of this Specification.
- .3 Complete work so that at no time airborne dust, visible debris, or water runoff contaminate areas outside the Abatement Work Area.
- .4 Any contamination of surrounding area (indicated by visual inspection or air monitoring) shall necessitate the clean-up of affected area, and in the same manner applicable to an Abatement Work Area at no cost to the Owner.
- .5 All work involving electrical, mechanical, carpentry, glazing, etc., shall be performed by licensed persons experienced and qualified for the work required.

1.8 Supervision

- .1 Provide on site for each work shift, a Shift Superintendent(s), who has authority regarding all aspects related to manpower, equipment and production.
- .2 At all times during work, the Shift Superintendent(s) must be on site. Failure to comply with this requirement will result in a stoppage of all work, at no cost to the Owner.
- .3 Replace supervisory personnel, with approved replacements, within three (3) working days of a written request from the Owner. Owner reserves the right to request replacement of supervisory personnel without explanation.
- .4 Do not replace supervisory personnel without written approval from the Owner.

1.9 Instruction and Training

- .1 Instruction and training must be provided by a competent person.
- .2 All workers completing Type 1, 2 or 3 asbestos abatement must be trained in compliance with Section 19 of O.Reg. 278/05.
 - .1 For Type 3 asbestos abatement, workers must be trained and certified per Section 20 of O.Reg. 278/05.

1.10 Notification

- .1 Before commencing work, notify orally and in writing, an inspector at the office of the Ontario Ministry of Labour nearest the project site, where required.
- .2 Inform all trades on site of the presence and location of hazardous materials identified in the Contract documents.
- .3 Notify the Owner or Owner's Representative, the Joint Occupational Health and Safety Committee and the Provincial Ministry of Labour, if suspected asbestos-containing materials not identified in the contract documents are discovered during the course of the work. Stop work in these areas immediately.
- .4 Notify Sanitary Landfill site as per O.Reg. 347/90 as amended.

1.11 Submittals

- .1 Submit prior to starting work:
 - .1 Provincial Workers' Compensation Board Clearance Certificate.
 - .2 Insurance certificates.
 - .3 Copy of Company Health and Safety Policy and applicable programs.
 - .4 Ministry of Labour Notice of Project form.
 - .5 Copy of Certificate of Approval for disposal of hazardous materials waste and location of landfill.
 - .6 Pre-removal damage survey of the Abatement Work Area(s), waste transport routes, and bin storage areas
- .2 Submit the following information regarding personnel prior to starting work:
 - .1 Proof in the form of a certificate that supervisory personnel have attended a training course on asbestos removal or are certified as supervisors under the Ministry of Training, Colleges and Universities course 253S.
 - .2 Written statement that personnel have had instruction on hazards of exposure to hazardous materials identified within this scope, the use of respirator, protective clothing, worker and waste decontamination procedures, and all aspects of work procedures and protective measures.

- .3 WHMIS training certificates for all personnel.
- .4 Certificate proving that each worker on site has been fit tested for the respirator appropriate for the work being performed.
- .3 Submit the following information regarding HEPA filtered devices prior to construction of enclosure or asbestos abatement:
 - .1 Performance data on HEPA filtered vacuums including DOP tests no more than 3 months old.
 - .2 Performance data on negative air units including DOP tests which must be no more than 3 months old if the unit is vented outdoors or which must be performed on site immediately prior to initial usage and when HEPA filters are changed if the unit is vented indoors.
 - .3 DOP tests to be performed by an independent testing company.
 - .1 DOP testing company is required to submit a detailed technical report of testing protocol, including Introduction, Methodology, Results, Conclusions, and Recommendations, including results of the Air-Aerosol Mixing Uniformity test as per ASME N510-1989 (1995).
 - .2 DOP testing company must also provide calibration certificates from an independent calibration firm or from the manufacturer of the testing equipment for both the aerosol photometer and the pressure gauge on the aerosol generator dated within 1 calendar year from the on-site testing date.
 - .3 DOP testing company must also provide the National Sanitation Foundation (NSF) certification name and number of the on-site technician performing the testing.
 - .4 Proof of calibration of DOP testing equipment.
- .4 Submit the following prior to isolating the work area:
 - .1 Safety Data Sheets for chemicals or material used in the course of the Abatement Project.
- .5 Submit the following upon completion of the work.
 - .1 Manifests, waybills, bills of lading etc. as applicable for each type of waste.

1.12 Inspection

- .1 From commencement of work until completion of clean-up operations, the Abatement Consultant is empowered by the Owner to inspect for compliance with the requirements of governing authorities, adherence to specified procedures and materials, and to inspect for final cleanliness and completion.
- .2 The Abatement Consultant is empowered by the Owner to order a shutdown of work when leakage of asbestos from the controlled work area has occurred or is likely to occur.

- .3 Any deviation from the requirements of the Specifications or governing authorities that is not approved in writing may result in a stoppage of work, at no cost to the Owner.
- .4 Additional labour or materials expended by the Contractor to rectify unsatisfactory conditions and to provide performance to the level specified shall be at no additional cost to the Owner.
- .5 Inspection and air monitoring performed as a result of Contractor's failure to perform satisfactorily regarding quality, safety, or schedule, shall be back-charged to the Contractor.
- .6 Facilitate inspection and provide access as necessary. Make good work disturbed by inspection and testing at no cost to the Owner.
- .7 Refer to the Sections identified in Related Work for specified milestone inspections which are to take place at defined points throughout the abatement operation specific to each phase or work area.
- .8 Provide 24 hours written notice to the Abatement Consultant of any request for scheduling of milestone inspections or transportation of waste through Occupied Areas.
- .9 The following Milestone Inspections may take place, at the Owner's cost, as outlined in each related specification section:
 - .1 Milestone Inspection - Clean Site Preparation
 - .1 Inspection of preparations and set-up prior to contaminated work in the Abatement Work Area.
 - .2 Milestone Inspection – Bulk Removal Inspection
 - .1 Inspection during asbestos removal, monitoring removal methods, site deficiencies, performing occupied air monitoring, etc.
 - .3 Milestone Inspection - Visual Clearance
 - .1 Inspection of Abatement Work Area after completion of all abatement, but prior to application of lock-down agents or dismantling of enclosure.
- .10 Refer to the Sections identified in Related Work for specified milestone inspections which are to take place at defined points throughout the abatement operation specific to each phase or work area.
- .11 Do not proceed with next phase of work until written approval of each milestone is received from the Abatement Consultant.

1.13 Air Monitoring - Asbestos

- .1 Air monitoring will be performed using Phase Contrast Microscopy (PCM) following the National Institute for Occupational Safety and Health Method 7400.

- .2 Co-operate in the collection of air samples, including providing workers to wear sample pumps for up to full-shift periods. Contractor will be responsible for the cost of testing equipment repairs or resampling resulting from the actions of the Contractor's forces.
- .3 Results of PCM samples at or exceeding 0.05 fibres per cubic centimeter of air (fibre/cc) or greater, outside an Abatement Work Area, will indicate asbestos contamination of these areas. Respond as follows:
 - .1 Suspend work within the adjoining Abatement Work Area until written authorization to resume work has been received from the Abatement Consultant.
 - .2 Isolate and clean area in the same manner applicable to the Abatement Work Area.
 - .3 Maintain work area isolation, and repeat clean-up operations until visual inspection and air monitoring results are at a level equal to that specified.
 - .4 At the discretion of the Abatement Consultant provide additional negative air units at locations specified in response to elevated fibre levels being detected in the Clean Change Room or Occupied Areas.
- .4 Results of PCM samples at or greater than 0.01 fibres per cubic centimeter of air (fibre/cc), collected within the Abatement Work Area enclosure after the site has passed a visual inspection, and an acceptable coat of lock-down agent has been applied, will indicate asbestos contamination of these areas. Respond as follows:
 - .1 Maintain work area isolation and re-clean entire work area. Then apply another acceptable coat of lock-down agent to exposed surfaces throughout the work area.
 - .2 Repeat above measures until visually inspected and air monitoring results are at a level equal to that specified
 - .3 Alternate to items above, the Asbestos Abatement Contractor can pay for analysis of PCM samples by Transmission Electron Microscopy (TEM) at NVLAP accredited laboratory.
 - .1 Enclosure to remain sealed, with negative pressure maintained, and subject to required daily inspections until TEM results are received.
- .5 Additional labour or materials expended by the Contractor to rectify unsatisfactory conditions and to provide performance to the level specified shall be at no additional cost to the Owner.
- .6 Cost of additional inspection and sampling performed as a result of elevated fibre levels in areas outside the Abatement Work Area or from within the work area following completion of work, will be back-charged to the Contractor.

1.14 Worker Protection

- .1 Instruct workers before allowing entry to the Abatement Work Area. Instruction shall include training in use of respirators, dress, showering, entry and exiting from an Abatement Work Area, and all other aspects of work procedures and protective measures.
- .2 Workers shall not eat, drink, chew gum or tobacco, vape or smoke in the Abatement Work Area.
- .3 Workers shall be fully protected at all times when possibility of disturbance of hazardous materials exists.
- .4 Provide soap, towels and facilities for washing of hands and face, which shall be used by all personnel when leaving the Abatement Work Area.
- .5 Respiratory Protection
 - .1 Refer to each particular Section of the Specification for specified type of respiratory equipment specific to each phase or work area.
 - .2 Respirators shall be:
 - .1 Certified by the National Institute of Occupational Safety and Health (NIOSH) or other testing agency acceptable to the Ministry of Labour.
 - .2 Fitted so that there is an effective seal between the respirator and the worker's face. Ensure that no person required to enter an Abatement Work Area has facial hair which affects the seal between respirator and face.
 - .3 Assigned to a worker for their exclusive use.
 - .4 Maintained in accordance with manufacturer's specifications.
 - .5 Cleaned, disinfected and inspected by a competent person after use on each shift, or more often if required.
 - .6 Repaired or have damaged or deteriorated parts replaced.
 - .7 Stored in a clean and sanitary location.
 - .8 Provided with new filters as necessary, according to manufacturer's instructions.
 - .9 Worn by personnel who have been fit checked by qualitative or quantitative fit-testing.
 - .10 Instruction on proper use of respirators must be provided by a competent person as defined by the Occupational Health and Safety Act.
 - .3 Provide protective clothing, to all personnel which:
 - .1 Is made of a material that does not readily retain nor permit penetration of asbestos fibres or lead/silica dust.
 - .2 Consists of head covering and full body covering that fits snugly at the ankles, wrists and neck.
 - .3 Once coveralls are worn, treat and dispose of as contaminated waste.
 - .4 Is replaced or repaired if torn or ripped.
 - .4 Use hard hats, safety footwear and other protective equipment and apparel required by applicable construction safety regulations.

1.15 Visitor Protection

- .1 Provide clean protective clothing and equipment to Authorized Visitors.
- .2 Instruct Authorized Visitors in the use of protective clothing and Abatement Work Area entry and exit procedures.
- .3 Authorized visitors are required to be fit tested on respirators, prior to entering Abatement Work Area.
 - .1 Respirator worn must be compliant with Section 13 and Table 2 of O.Reg. 278/05.

1.16 Signage

- .1 Asbestos Abatement Signs: Post signs at access points to the Abatement Work Area, stating at minimum, the following:
 - .1 There is an asbestos dust hazard.
 - .2 Access to the work area is restricted to persons wearing protective clothing and equipment.
- .2 Vehicles, Bins and Asbestos Waste Containers: Post signs on both sides of every vehicle used for the transportation of asbestos waste and on every asbestos waste container. Signs must display thereon in large, easily legible letters that contrast in colour with the background the word “CAUTION” in letters not less than ten centimetres in height and the words:
 - .1 CONTAINS ASBESTOS FIBRES
 - .2 Avoid Creating Dust and Spillage
 - .3 Asbestos May be Harmful To Your Health
 - .4 Wear Approved Protective Equipment.
- .3 Place placards in accordance with Transportation of Dangerous Goods Act.

1.17 Waste and Material Handling

- .1 Waste bins must be placed on grade or in receiving.
- .2 All bins for hazardous materials must be covered and locked when waste transfer is not being performed.
- .3 Ensure redundant non-ACM, rubble, debris, etc. removed during contaminated work are treated, packaged, transported and disposed of as appropriate waste.
- .4 Clean, wash and apply Post Removal Sealant to metal waste prior to removal from Abatement Work Area. Recycle metals.

- .5 Clean, wash and apply Post Removal Sealant to non-porous materials prior to disposal as clean waste. Obtain prior written approval from the Abatement Consultant for each individual type of material.
- .6 Clean and wash equipment prior to removal from Abatement Work Area if removed prior to completion.
- .7 Place all equipment, tools and unused materials that cannot be cleaned in Abatement Waste Containers.
- .8 As work progresses, and at regular intervals, transport the sealed and labelled waste containers from the Abatement Work Area to waste bin.
- .9 Place items in bins according to waste classification. Place asbestos waste, metals, non-asbestos waste, etc. in separate bins.
- .10 Removal of waste containers and decontaminated tools and materials from the Abatement Work Area shall be performed as follows:
 - .1 Remove any visible contamination from the surface of non-porous or cleanable waste being removed from the Abatement Work Area. If the item can be cleaned, remove it from the site as clean waste.
 - .2 Place waste or item in Waste Container and seal closed.
 - .3 Wet wipe outside of Waste Container.
 - .4 Within Decontamination Facility, Transfer Room or at the perimeter of the Abatement Work Area, place in second Waste Container. Seal closed.
 - .5 Remove waste containers and transport to appropriate bin.
- .11 Transport waste and materials via the predetermined routes and exits. Arrange waste transfer route with Owner. Use a closed, covered cart to transport through Occupied Areas.
- .12 Provide workers transporting waste with means to access full personal protective equipment and all tools required to properly clean up spilled material in the case of a rupture of a Waste Container.
- .13 Pick-up and drop off of garbage bin shall be at pre-approved times, and must not interfere with the Owners operations.
- .14 Transport hazardous waste to landfill or waste transfer station licensed by the provincial Ministry of the Environment.
- .15 Cooperate with the provincial Ministry of the Environment inspectors and immediately carry out instructions for remedial work at dump to maintain environment, at no additional cost to the Owner.

1.18 Re-establishment of Objects and Systems

- .1 Re-establish objects and items relocated by the Contractor's workforce to facilitate work.
- .2 Re-establish electrical, communication, HVAC and other services previously disconnected or otherwise isolated to accommodate work by this Section.
- .3 Make good at completion of work, all damage not identified in pre-removal survey.

PART 2 PRODUCTS AND FACILITIES

2.1 Materials and Equipment

- .1 Refer to the Sections identified in Related Work for specified materials, equipment or facilities specific to each phase or work area.
- .2 Materials and equipment must be in good condition and free of debris and fibrous materials. Disposable items must be of new materials only.
- .3 Airless Sprayer: AC powered pressure washer that allows wetting agent to mix with water, uses no air or compressed air, and has a nozzle to regulate power and pressure.
- .4 Amended Water: Water with wetting agent added for purpose of reducing surface tension to allow thorough wetting of materials.
- .5 Asbestos Waste Container: A container acceptable to disposal site, Ministry of the Environment, and Ministry of Labour, comprised of the following:
 - .1 Dust tight.
 - .2 Suitable for the type of waste.
 - .3 Impervious to asbestos.
 - .4 Identified as asbestos waste.
- .6 HEPA Vacuum: Vacuum with necessary fittings, tools and attachments. Discharged air must pass through a HEPA filter.
- .7 Hose: Leak-proof, minimum bursting strength of 500 PSI or greater if required, abrasion resistant covering, reinforcing, and machined-brass couplings. Maintained and tested. Hose to be temperature resistant if it is to carry domestic hot water.
- .8 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints.: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints.
- .9 Post Removal Sealant (or Lockdown): Sealant that when applied to surfaces serves the function of trapping residual asbestos fibres or other dust. Product must have flame spread and smoke development ratings both less than 50. Product shall leave no stain when dry. Post Removal Sealant shall be compatible with replacement insulation or fireproofing where required and capable of withstanding service temperature of substrate. Apply to manufacturer's instructions.

- .10 Protective Clothing: Disposable coveralls complete with head covering and full body covering that fits snugly at the ankles, wrists and neck.
- .11 Rip-Proof Polyethylene Sheeting: 8 mil (0.20 mm) fabric made up from 5 mil (0.13 mm) weave and two (2) layers of 1.5 mil (0.05 mm) poly laminate or approved equal. In sheet size to minimize on-site seams and overlaps.
- .12 Sprayer: Garden type portable manual sprayer or water hose with spray attachment if suitable.
- .13 Tape: Duct tape or tape suitable for sealing polyethylene to surfaces under both dry and wet conditions in the presence of Amended Water.
- .14 Wetting Agent: Non-sudsing surfactant added to water to reduce surface tension and increase wetting ability.

PART 3 EXECUTION

- .1 Refer to the Sections identified in Related Work for specified procedures for work area preparation, maintenance, site dismantlement, application of lock-down agent and all other procedures for the safe handling, removal and clean-up of hazardous materials specific to each phase or work area.

END OF SECTION

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PART 1 GENERAL

1.1 General and Related Work

- .1 Read this Section in conjunction with all drawings and all other Sections so as to comply with the requirements of the General Conditions of the Contract.
- .2 Requirements specified elsewhere:
 - .1 Section 02 81 00 Hazardous Materials – General Provisions

1.2 Outline of Work

- .1 Refer to Section 02 81 00 Hazardous Materials – General Provisions for the Outline of Work.
- .2 The intent of this Section is to provide safe work practices and procedures to govern the handling, removal, clean-up and disposal of asbestos-containing materials following Type 2 or Moderate Risk procedures, and Pinchin and Owner specific requirements.

1.3 Personal Protection

- .1 Protect all personnel at all times when possibility of disturbance of ACM exists.
- .2 Provide the following minimum respiratory protection to all personnel:
 - .1 Full face respirators with P100 high efficiency (HEPA) cartridge filters, for:
 - .1 Removal of all or part of a ceiling if asbestos is likely lying on the surface.
 - .2 Use of a HEPA filtered power tool on non-friable ACM if the material is not wetted.
 - .2 Non-powered half-face respirators with P100 high efficiency (HEPA) cartridge filters.
- .3 Provide protective clothing, to all personnel entering the Abatement Work Area.
- .4 Wear hard hats, safety shoes and other personal protective equipment required by applicable construction safety regulations.

1.4 Inspections

- .1 Refer to Section 02 81 00 – General Provisions.
- .2 The following Milestone Inspections are to be scheduled:
 - .1 Milestone Inspection - Clean Site Preparation
 - .2 Milestone Inspection – Bulk Removal Inspection
 - .3 Milestone Inspection - Visual Clearance

PART 2 PRODUCTS AND FACILITIES

- .1 Refer to Section 02 81 00.

2.2 Hoarding Walls

- .1 Type A Hoarding Wall: One layer of rip-proof polyethylene sheeting installed floor to ceiling, secured with telescopic poles, clips, or other suitable methods.

2.3 Curtained Doorways

- .1 Construct as follows:

- .1 Install two flap doors, full width and height of door opening at all doors to Abatement Work Area.
- .2 Construct each flap door of two layers of polyethylene sheeting with all edges reinforced with tape. Use wood strapping to securely fasten flap doors to head and alternate jambs.
- .3 Install weights attached to bottom edge of each door flap.
- .4 Provide direction arrows on flaps to indicate opening.

PART 3 EXECUTION

3.1 Site Preparation - General

- .1 Remove stored or non-fixed items from the Abatement Work Area including but not limited to equipment, furniture, waste etc. Store in area provided by Owner.
- .2 Moving of equipment, tools, supplies, and stored materials that can be performed without disturbing ACM will be performed by others.
- .3 Remove visible dust and friable material from all surfaces in the work area including those to be worked on, using HEPA Vacuums or wet wiping.
- .4 Isolate, at panel, and disconnect existing power supply to Abatement Work Area. Power supply to remaining areas of building must not be disrupted during work of this section.
 - .1 Lock-out/tag-out power at electrical panels.
 - .2 Mark/tag any items within or passing through the Abatement Work Area that are to remain live including but not limited to cable, conduit, wire, fixtures, equipment panels, etc.
- .5 Provide power from ground fault interrupt circuits.
- .6 Shut down HVAC systems serving the Abatement Work Area.
 - .1 Install polyethylene sheeting over openings in ducts and diffusers and seal.
 - .2 HVAC to remaining areas of building must not be disrupted during work of this section.
 - .3 System shall remain inoperative until completion of work, unless ducts can be effectively capped.
 - .4 Perform work at scheduled times after shutting down HVAC systems affecting the Abatement Work Area.
- .7 Provide amended water for wetting ACM, and adequate method of wetting (garden sprayers, airless sprayers, etc).

3.2 Site Preparation – No Enclosure Required

- .1 Install caution tape around work area where existing walls are not present.
- .2 Cover walls, floors, finishes, millwork, equipment and furnishings remaining in the Abatement Work Area with polyethylene sheeting before disturbing ACM to control the spread of dust.
- .3 Install one layer of 6 mil polyethylene sheeting so as to protect all equipment and finishes in the Abatement Work Area that may be damaged. Items to remain include but are not limited to:
 - .1 Millwork.
 - .2 Doors.

- .3 Bulkheads.
- .4 Toilet Partitions.
- .5 Plumbing fixtures.
- .6 Electrical Equipment.
- .7 Mechanical Equipment.
- .4 Install Signage in clearly visible locations and in sufficient numbers to adequately warn of an asbestos dust hazard.
- .5 Install temporary lighting in enclosure to a level that will provide for safe and efficient use of work area - minimum 550 LUX.
- .6 Place HEPA vacuum in Abatement Work Area.
- .7 Place required tools to complete the abatement with the Abatement Work Area.

3.3 Maintenance of Abatement Work Area

- .1 Inspect polyethylene sheeting and ensure it is effectively sealed and taped. Repair damage and remedy defects immediately.
- .2 Inspect electrical panels and ensure locks and tags are on panels prior to entering the Abatement Work Area.
- .3 Inspect HEPA filtered negative pressure machines including discharge ducting at the beginning and end of each working period. Inspection must be performed by competent person.
- .4 Maintain Abatement Work Area in tidy condition.
- .5 Remove standing water on polyethylene/floor at the end of every shift.
- .6 Turn off water supply to any hoses and reduce pressure in hose, prior to leaving the Abatement Work Area at end of shift.

3.4 Asbestos Removal - General

- .1 Do not use compressed air to clean or remove dust or debris.
- .2 Frequently and at regular intervals during the work, clean up dust and waste using HEPA vacuums and/or wet sweeping or mopping.
- .3 Frequently and at regular intervals, place all waste in asbestos waste containers.
- .4 Immediately upon completion of work, clean area with HEPA vacuum and/or wet sweeping or mopping.

3.5 Asbestos Disturbance – Removal and Installation of Items Affixed to Plaster, Textured Plaster, and Drywall with HEPA Filtered Power Tools

- .1 Use the procedures described above under *Site Preparation – Enclosure Required*.
- .2 Wet all material to be disturbed.
- .3 Turn on HEPA vacuum. Vacuum to remain operational throughout work.
- .4 Place removed ACM directly into an asbestos waste container.
- .5 If power tool can disconnect from HEPA vacuum, remove tool, and HEPA vacuum tool and bit, blade, etc, and shrouds.
- .6 Remove items affixed to ceiling and turn over to owner and or protect where not scheduled for removal.

- .7 Wet clean or HEPA vacuum the entire Abatement Work Area, including surfaces not covered with polyethylene sheeting. Any materials or equipment removed to access ACM that are to be reused, must be wet cleaned or vacuumed prior to reinstatement.

3.6 Asbestos Removal - Plaster Debris

- .1 Use the procedures described above under *Site Preparation –No Enclosure Required*.
- .2 Remove plaster debris from ceiling using HEPA vacuums or wet cleaning methods.

3.7 Application of Post Removal Sealant

- .1 Apply one coat of Post Removal Sealant with an airless sprayer, in accordance with Manufacturer's Instructions, to cover all surfaces on all items in the Abatement Work Area, including but not limited to polyethylene, ACM substrate, structural steel, and surfaces scheduled for demolition.
- .2 Do not apply post removal sealant to materials that will be damaged by its application.

3.8 Abatement Work Area Dismantling

- .1 Wash or HEPA vacuum equipment and tools used in contaminated Abatement Work Area to remove all asbestos contamination, or place in Asbestos Waste Containers prior to being removed from Abatement Work Area.
- .2 Place tools and equipment used in contaminated work site but not cleaned in polyethylene bags prior to removal from Abatement Work Area.
- .3 Clean polyethylene sheeting and drop sheets which with HEPA vacuum or wet cleaning methods at completion of work.
- .4 Wet drop sheets and polyethylene sheeting.
- .5 Carefully roll polyethylene sheeting and drop sheets toward the centre of enclosure. As polyethylene is rolled away, immediately remove visible debris beneath with a HEPA vacuum.
- .6 Remove remaining polyethylene sheeting and tape, and dispose of as asbestos waste.
- .7 Place polyethylene sheeting, drop sheets, tape, disposal clothing and other contaminated waste in asbestos waste containers, wet wipe and place in second asbestos waste container.
- .8 Remove remaining site isolation, seals, tape, etc.
- .9 Remove seals, tape, Signage etc.
- .10 Immediately upon shutting down negative air units, seal air inlet grill and exhaust vent with polyethylene and tape.
- .11 Seal openings in HEPA vacuums.
- .12 Remove and dispose of the pre-filters from HEPA filtered negative pressure machines as asbestos waste.
- .13 Remove HEPA filtered negative pressure machines and discharge ducting or HEPA vacuums.
- .14 Remove temporary lights.
- .15 Remove ground fault panels.
- .16 Place contaminated materials including polyethylene sheeting, drop sheets, seals, tape, disposable coveralls, and other contaminated waste in asbestos waste containers.

3.9 Waste and Material Handling

- .1 Refer to Section 02 81 00.

3.10 Re-Establishment of Items

- .1 Upon completion of work:
 - .1 Move items that were removed from Abatement Work Area prior to work, back into same location within Abatement Work Area.
 - .2 Remove and disconnect tags and locks from electrical panels and re-energize equipment and items.
 - .3 Clean, mop and vacuum area beneath Decontamination Facilities.
 - .4 Enable building air handling systems.

END OF SECTION

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I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Not used.

I.02 REFERENCE STANDARDS

- .1 Aluminum Association (AA)
 - .1 AA DAF 45, Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials (ASTM)
 - .1 ASTM C475, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .2 ASTM C514, Standard Specification for Nails for the Application of Gypsum Board.
 - .3 ASTM C557, Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
 - .4 ASTM C840-16, Standard Specification for Application and Finishing of Gypsum Board.
 - .5 ASTM C954-15, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 - .6 ASTM C1002-14, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .7 ASTM C1047-14a, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - .8 ASTM C1177/C1177M-13, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .9 ASTM C1178/C1178M-13, Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.
 - .10 ASTM C1280-13a, Standard Specification for Application of Gypsum Sheathing.
 - .11 ASTM C1396/C1396M-14a, Standard Specification for Gypsum board.
- .3 Association of the Wall and Ceilings Industries International (AWCI)
 - .1 AWCI Levels of Gypsum Board Finish.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .5 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-10, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

I.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:

- .1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit gypsum board assembly drawings stamped and signed by professional engineer registered or licensed in Ontario, Canada.
 - .2 Indicate components such as fastener type, dimensions, spacing and locations at gypsum board edges, ends and in field of board as well as installation methods. Components and work to confirm to ASTM C 840 standard specification for application and finishing of gypsum board.
 - .3 Indicate type of joint compound, and number of joint compound layers.
 - .4 Indicate number and location of electrical boxes for wall and ceiling.
- .4 Samples:
 - .1 Submit for review and acceptance of each component specified or necessary for complete installation. Include technical descriptive data.
 - .2 Submit samples of gypsum board and 300 mm long samples of corner and casing beads.
 - .3 Samples will be returned for inclusion into work.
- .5 Certifications:
 - .1 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .6 Construction Waste Management:
 - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
- .7 Low-Emitting Materials:
 - .1 Submit listing of adhesives and sealants and paints and coatings used in building, showing compliance with VOC and chemical component limits.

I.04 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address and applicable standard designation.
- .3 Exercise care in unloading gypsum board materials shipment to prevent damage.
- .4 Storage and Handling Requirements in accordance with ASTM C 840-16:
 - .1 Store gypsum board assemblies materials level flat off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.
 - .3 Protect gypsum board from direct exposure to rain, snow, sunlight, or other excessive weather conditions.
 - .4 Protect ready mix joint compounds from freezing, exposure to extreme heat and direct sunlight.
 - .5 Protect from weather, elements and damage from construction operations.
 - .6 Handle gypsum boards to prevent damage to edges, ends or surfaces.

- .7 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
- .8 Replace defective or damaged materials with new.
- .5 Develop Construction Waste Management Plan related to Work of this Section.

1.05 AMBIENT CONDITIONS

- .1 Maintain temperature 10 °C minimum, 21 °C maximum for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum after completion of joint treatment.
- .2 Apply board and joint treatment to dry, clean, frost free surfaces.
- .3 Ventilation: ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

2 PRODUCTS

2.01 MATERIALS

- .1 Standard board: to ASTM C1396/C1396M-14 regular 12.7 mm thick and Type X, 15.9mm thick, 1200 mm wide x maximum practical length, ends square cut, edges squared.
- .2 Gypsum sheathing board: to ASTM C1396/C1396M-14, regular, 12.7 mm thick and Type X, 15.9 mm thick, 1200 mm wide x maximum practical length.
- .4 Backing board and coreboard: to ASTM C1396/C1396M-14 regular, 12.7 mm thick squared edges.
- .5 Water-resistant board: to ASTM C1396/C1396M-14 regular, 12.7 mm thick and Type X, 15.9 mm thick, 1200 mm wide x maximum practical length.
- .12 Nails: to ASTM C514-14
- .13 Steel drill screws: to ASTM C1002-14
- .14 Stud adhesive: to CAN/CGSB-71.25.
- .15 Laminating compound: as recommended by manufacturer, asbestos-free.
- .16 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, PVC, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .17 Shadow mould: 35 mm high, snap-on trim, of 0.6 mm base steel thickness galvanized sheet pre-finished in satin enamel, white colour.
- .19 Vinyl mouldings: mouldings for joint treatment of vinyl-faced gypsum board, as supplied by gypsum board manufacturer.
- .20 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 VOC limit 250 g/L maximum.
 - .2 Acoustic sealant: in accordance with Section 07 92 00 - Joint Sealants.
- .21 Polyethylene: to CAN/CGSB-51.34, Type 2
- .23 Joint compound: to ASTM C475, asbestos-free

2.02 FINISHES

- .1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by

gypsum board manufacturer.

- .1 Primer: VOC limit 200 g/L maximum to GS-11.

3.01 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies installation in accordance with manufacturer's written instructions.
 - .1 Inform HWDSB and JASON FUNG ARCHITECT INC. of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from JASON FUNG ARCHITECT INC..

3.02 ERECTION

- .1 Do application and finishing of gypsum board to ASTM C840-16 except where specified otherwise
- .2 Do application of gypsum sheathing to ASTM C1280-13a
- .3 Erect hangers and runner channels for suspended gypsum board ceilings to ASTM C840-16 except where specified otherwise
- .4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .5 Install work level to tolerance of 1:1200.
- .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.
- .7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .8 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .10 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .11 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .12 Erect drywall resilient furring transversely between layers of gypsum board, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 25 mm drywall screw.
- .13 Install 150 mm continuous strip of 12.7 mm gypsum board along base of partitions where resilient furring installed.

3.03 APPLICATION

- .1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.
- .2 Apply single layer gypsum board metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
 - .1 Single-Layer Application:
 - .1 Apply gypsum board on ceilings prior to application of walls to ASTM C840-16
 - .2 Apply gypsum board on walls vertically or horizontally, providing sheet lengths that will minimize number of board edges or end joints.

- .3 Apply single layer gypsum board to concrete surfaces, where indicated, using laminating adhesive.
 - .1 Comply with gypsum board manufacturer's recommendations.
 - .2 Brace or fasten gypsum board until fastening adhesive has set.
 - .3 Mechanically fasten gypsum board at top and bottom of each sheet.
- .6 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.
- .7 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
- .8 Install gypsum board with face side out.
- .9 Do not install damaged or damp boards.
- .10 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.04 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre using contact adhesive for full length.
- .2 Install casing beads around perimeter of suspended ceilings.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .5 Install shadow mould at gypsum board/ceiling juncture. Minimize joints; use corner pieces and splicers.
- .6 Construct control joints of two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .7 Provide continuous polyethylene dust barrier behind and across control joints.
- .9 Install control joints straight and true.
- .10 Ensure that screws or nails are properly applied in process of attaching gypsum board to framing without damaging of gypsum board edges and ends.
- .11 Construct expansion joints, at building expansion and construction joints. Provide continuous dust barrier.
- .12 Install expansion joint straight and true.
- .13 Splice corners and intersections together and secure to each member with 3 screws.
- .14 Install access doors to electrical and mechanical fixtures specified in respective sections.
 - .1 Rigidly secure frames to furring or framing systems.
- .15 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.

- .16 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI Levels of Gypsum Board Finish:
 - .1 Levels of finish:
 - .1 Level 5: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges.
 - .2 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
 - .3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board, invisible after surface finish is completed.
 - .4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
 - .5 Completed installation smooth, level or plumb, free from waves and other defects and ready for surface finish.
 - .6 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
 - .24 Mix joint compound slightly thinner than for joint taping.
 - .25 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface texture differences, variations or tool marks.
 - .26 Allow skim coat to dry completely.
 - .27 Remove ridges by light sanding or wiping with damp cloth.

3.05 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

3.06 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by gypsum board assemblies installation.

3.07 SCHEDULES

- .1 Not used.

END OF SECTION

I GENERAL

I.1 RELATED DOCUMENTS

- .1 Not used.

I.2 SUMMARY

- .1 Section Includes
 - .2 Acoustical ceiling panels
 - .2 Exposed grid suspension system
 - .3 Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
 - .4 Perimeter Trim
- .2 Related Sections
 - .1 Section 09 51 23 – Acoustical Tile Ceilings
 - .2 Section 09 20 00 - Plaster and Gypsum Board
- .3 Alternates
 - .1 Prior Approval: Refer to the RFT document for substitutions. Acceptability of a proposed substitution is contingent upon HWDSB and JASON FUNG ARCHITECT INC.'s review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been pre-approved by the architect and included in the Addenda, the originally specified products shall be provided without additional compensation.
 - .2 Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers; Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

I.3 REFERENCES

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
 - .2 ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
 - .3 ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
 - .4 ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
 - .5 ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
 - .6 ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
 - .7 ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
 - .8 ASTM E 1264 Classification for Acoustical Ceiling Products

I.4 SYSTEM DESCRIPTION

- .1 Continuous/Wall-to-wall

I.5 SUBMITTALS

- .1 Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

- .2 Samples: Minimum 6-inch x 6-inch samples of specified acoustical panel; 8-inch-long samples of exposed wall molding and suspension system, including main runner and 4-foot cross tees.
- .3 Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with or supported by the ceilings.
- .4 Acoustical Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification, such as Underwriter's Laboratory (UL), of NRC, CAC, and AC.
 - .1 If the material supplied by the acoustical subcontractor does not have an independent laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of, and replaced with complying product at the expense of the Contractor performing the work.

1.6 SUSTAINABLE MATERIALS

- .1 Not used

1.7 QUALITY ASSURANCE

- .1 Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer to ensure fit and function.

1.8 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- .2 Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- .3 Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.9 PROJECT CONDITIONS

- .1 Space Enclosure:
 - .1 HumiGuard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with HumiGuard Plus performance and hot dipped galvanized steel, aluminum or stainless-steel suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

1.10 WARRANTY

- .1 Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:
 - 1. Acoustical Panels with HumiGuard® Max and HumiGuard® Plus performance: sagging and warping
 - 2. Acoustical panels with BioBlock® performance: growth of mold and mildew
 - 3. Grid System: rusting and manufacturer's defects
- .2 Warranty Period:
 - 1. Ceiling System: Thirty (30) years from date of substantial completion

- .3 The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.11 MAINTENANCE

- .1 Extra Materials: Deliver extra materials to HWDSB. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - .1 Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
 - .2 Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

2 PRODUCTS

2.1 MANUFACTURERS

- .1 Ceiling Panels:
 - .1 Armstrong World Industries, Inc. or approved equivalent by HWDSB and JASON FUNG ARCHITECT INC.
 - .2 Substitutions: Refer to RFT document.
- .2 Suspension Systems:
 - .1 Hot-dipped galvanized steel, Prelude XL 15/16" Exposed Tee by Armstrong World Industries.
 - .2 Substitutions: Refer to RFT document.

2.2 ACOUSTICAL CEILING UNITS

- .1 Acoustical Panel Ceilings
 - .1 Surface Texture: Medium Texture
 - .2 Composition: Mineral Fiber
 - .3 Color: White
 - .4 Size: 24 in x 48 in
 - .5 Edge Profile: Square Lay-in
 - .6 Noise Reduction Coefficient (NRC) ASTM C 423 Classified w/ UL label on product carton: 0.70
 - .7 Ceiling Attenuation Class (CAC): ASTM E1414/E1414M; Classified with UL label on product carton: 40
 - .8 Flame Spread: ASTM E 1264; Class A
 - .9 Light Reflectance (LR) White Panel: ASTM E 1477; 0.82
 - .10 Dimensional Stability: HumiGuard Plus
 - .11 Recycle Content: Up to 56% total recycled content. (Total recycled content: pre-consumer, post-consumer and post-industrial)
 - .12 Material Ingredient Transparency: Health Product Declaration (HPD); Declare Label
 - .13 Basis of Design: SCHOOL ZONE FINE FISSURED, item number #1714, as manufactured by Armstrong World Industries, Inc. or approved equivalent by HWSDDB and JASON FUNG ARCHITECT INC.
 - .14 Substitutions: Refer to RFT document.

2.3 METAL SUSPENSION SYSTEMS

- .1 Components:

- .1 Color: White
- .2 Basis of Design if replacement is required:
 - i. Prelude XL 15/16" Exposed Tee as manufactured by Armstrong World Industries, Inc. or approved equivalent by HWDB and JASON FUNG ARCHITECT INC.
 - ii. Substitutions: Refer RFT document.

3 EXECUTION

3.1 EXAMINATION

- .1 Do not proceed with installation until all wet work such as concrete, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations. (Exception: HumiGuard Max Ceilings)

3.2 PREPARATION

- .1 Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
- .2 Coordinate Tee ceiling grid as noted in drawings.
 - i. 2'x4' grid except at light fixture locations.
 - ii. 1'x4' grid at lighting fixture locations.
- .2 Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
- .3 Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION

- .1 Follow manufacturer installation instructions.
- .2 Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
- .3 Suspend main beam from overhead construction with hanger wires spaced 4 feet on center along the length of the main runner. Install hanger wires plumb and straight.
- .4 Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
- .5 For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
- .6 Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

- .1 Replace damaged and broken panels.
- .2 Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.
- .3 Additional or excess material to be stored safely and returned to HWDSB unless instructed otherwise after completion of work.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

I.02 REFERENCE STANDARDS

- .1 Environmental Protection Agency (EPA)
 - .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, EPA Method 24 - Surface Coatings.
 - .2 SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Safety Data Sheets (SDS).
- .3 Master Painters Institute (MPI)
 - .1 The Master Painters Institute (MPI)/Architectural Painting Specification Manual (ASM) - [current edition].
 - .2 Standard GPS-1-12, MPI Green Performance Standard.
 - .3 Standard GPS-2-12, MPI Green Performance Standard.
- .4 National Research Council Canada (NRC)
 - .1 National Fire Code of Canada (NFC).
- .5 Society for Protective Coatings (SSPC)
 - .1 SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.

I.03 ADMINISTRATIVE REQUIREMENTS

- .1 Scheduling:
 - .1 Submit work schedule for various stages of painting to HWDSB for review. Provide schedule minimum of 48 hours in advance of proposed operations.
 - .2 Obtain written authorization from HWDSB for changes in work schedule.
 - .3 Schedule new additions to existing building coordinate painting operations with other trades.

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's instructions, printed product literature and data sheets for paint and paint products and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS SDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .3 Confirm products to be used are in MPI's approved product list.
- .3 Upon completion, provide records of products used. List products in relation to finish system and include the following:
 - .1 Product name, type and use.

- .2 Manufacturer's product number.
- .3 Colour numbers.
- .4 MPI Environmentally Friendly classification system rating.
- .5 Manufacturer's Safety Data Sheets (SDS).
- .4 Samples:
 - .1 Submit full range colour sample chips to indicate where colour availability is restricted.
 - .2 Submit duplicate 200 x 300mm sample panels of each paint, stain, clear coating, special finish with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards submitted on following substrate materials:
 - .1 3 mm plate steel for finishes over metal surfaces.
 - .2 13 mm plywood for finishes over wood surfaces.
 - .3 50 mm concrete block for finishes over concrete or concrete masonry surfaces.
 - .4 13 mm gypsum board for finishes over gypsum board and other smooth surfaces.
 - .5 10 mm plywood for finishes over wood surfaces.
 - .3 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
- .5 Certificates: Provide certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties. MPI Gateway #.
- .6 Manufacturer's Instructions:
 - .1 Provide manufacturer's installation and application instructions.

I.05 CLOSEOUT SUBMITTALS

- .1 Provide in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: Provide operation and maintenance data for painting materials for incorporation into manual.
- .3 Include:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly classification system rating.

I.06 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Stock Materials:
 - .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Submit one four litre can of each type and colour of primer, stain, finish coating. Identify colour and paint type in relation to established colour schedule and finish system.

I.07 QUALITY ASSURANCE

- .1 Qualifications:

- .1 Materials: in accordance with MPI Painting Specification Manual “Approved Product” listing and from a single manufacturer for each system used.
- .2 Retain purchase orders, invoices and documents to prove conformance with noted MPI requirements when requested by HWDSB.
- .3 Standard of Acceptance:
 - .1 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .2 Mock-Ups:
 - .1 When requested by HWDSB or Paint Inspection Agency, prepare and paint designated surface, area, room or item to requirements specified herein, with specified paint or coating showing selected colours, number of coats, gloss/sheen, textures and quality of work to MPI Painting Specification Manual standards for review and approval.
 - .2 Construct mock-ups in accordance with Section 01 43 00 - Quality Assurance.
 - .1 Provide 300mm x 300mm mock-up. Prepare and paint designated surface, area, room or item (in each colour scheme) to specified requirements, with specified paint or coating showing selected colours, gloss/sheen, textures.
 - .2 Mock-up will be used:
 - .1 To judge quality of work, substrate preparation, operation of equipment and material application and skill to MPI Architectural Painting Specification Manual standards.
 - .3 Locate where directed.
 - .4 Allow 24hours for inspection of mock-up before proceeding with Work.
 - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may not remain as part of finished work. Remove mock-up and dispose of materials when no longer required and when directed by HWDSB.

I.08 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer’s written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer’s name and address.
 - .1 Labels: to indicate:
 - .1 Type of paint or coating.
 - .2 Compliance with applicable standard.
 - .3 Colour number in accordance with established colour schedule.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors, in dry location and in accordance with manufacturer’s recommendations in clean, dry, well-ventilated area.
 - .2 Observe manufacturer’s recommendations for storage and handling.

- .3 Store materials and supplies away from heat generating devices.
- .4 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .5 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of HWDSB. After completion of operations, return areas to clean condition to approval of HWDSB.
- .6 Remove paint materials from storage only in quantities required for same day use.
- .7 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
- .8 Fire Safety Requirements:
 - .1 Provide one Type ABC fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada (NFC).

I.09 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Heating, Ventilation and Lighting:
 - .1 Ventilate enclosed spaces.
 - .2 Provide heating facilities to maintain ambient air and substrate temperatures above [10] degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
 - .3 Provide continuous ventilation for 7 days after completion of application of paint.
 - .4 Coordinate use of existing ventilation system with HWDSB and ensure its operation during and after application of paint as required.
 - .5 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
 - .6 Provide minimum lighting level of 323 Lux on surfaces to be painted.
 - .7 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless pre-approved written approval by HWDSB and product manufacturer, perform no painting when:
 - .1 Ambient air and substrate temperatures are below 10 degrees C.
 - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
 - .4 The relative humidity is under 85 % or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the

ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.

- .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
- .6 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
- .2 Perform painting work when maximum moisture content of the substrate is below:
 - .1 12 % for concrete and masonry (clay and concrete brick/block). Allow new concrete and masonry to cure minimum of 28 days.
 - .2 12 % for plaster and gypsum board.
 - .3 No maximum moisture content required for metal grid.
- .3 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".
- .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .8 Surface and Environmental Conditions:
 - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
 - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
 - .3 Apply paint when previous coat of paint is dry or adequately cured.
- .9 Additional interior application requirements:
 - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
 - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of HWDSB such that painted surfaces will have dried and cured sufficiently before occupants are affected.

2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- .1 Environmental Performance Requirements:
 - .1 Provide paint products meeting MPI "Environmentally Friendly" ratings based on VOC (EPA Method 24) content levels
 - .2 Green Performance in accordance with MPI Standard GPS-I.

2.02 MATERIALS

- .1 Only Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project

- .2 Provide paint materials for paint systems from single manufacturer. Acceptable Products:
 - .1 Primers:
 - .1 Benjamin Moore: Fresh Start for drywall, Super Spec for metal
 - .2 Sherwin Williams, Multi-purpose for drywall, Extreme Bond for metal
 - .3 Dulux-Glidden, Pro Primer for drywall, Metalshield for metal
 - .2 Finish Coat:
 - .1 Benjamin Moore, Scuff-X
 - .2 Sherwin Williams, Scuff Tuff
 - .3 Dulux-Glidden, Scuffshield
- .3 Only qualified products with E2 "Environmentally Friendly" rating are acceptable for use on this project.
- .4 Conform to latest MPI requirements for interior painting work including preparation and priming
- .5 Provide paint products meeting MPI "Environmentally Friendly" E1 ratings based on VOC (EPA Method 24) content levels
- .6 Use MPI listed materials having minimum E2 rating where indoor air quality (odour) requirements exist.
- .7 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids to be:
 - .1 Be Water-based.
 - .2 Be non-flammable.
 - .3 Be manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
 - .4 Be manufactured without compounds which contribute to smog in the lower atmosphere.
 - .5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
- .8 Ensure manufacture and process of both water-borne surface coatings and recycled water-borne surface coatings does not release:
 - .1 Matter in undiluted production plant effluent generating 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to natural watercourse or sewage treatment facility lacking secondary treatment.
 - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
- .9 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.
- .10 Recycled water-borne surface coatings to contain 50% post-consumer material by volume.
- .11 Recycled water-borne surface coatings must not contain:
 - .1 Lead in excess of 600.0 ppm weight/weight total solids.
 - .2 Mercury in excess of 50.0 ppm weight/weight total product.
 - .3 Cadmium in excess of 1.0 ppm weight/weight total product.
 - .4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.

- .5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.

2.03 COLOURS

- .1 HWDSB and JASON FUNG ARCHITECT INC. will provide Colour Schedule after Contract award.
.1 Submit proposed Colour Schedule to HWDSB for review.
- .2 Colour schedule will be based upon selection of 3 colours. No more than 2 colours will be selected for entire project.
- .4 Where specific products are available in restricted range of colours, selection based on limited range.
- .5 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats, if requested by HWDSB.
- .6 For deep and ultra deep colours; 4 coats may be required.

2.04 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Obtain written approval from HWDSB for tinting of painting materials.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity. Strain as necessary.

2.05 GLOSS/SHEEN RATINGS

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

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 - Matte Finish (flat)	Max. 5	Max. 10
Gloss Level 2 - Velvet-Like Finish	Max. 10	10 to 35
Gloss Level 3 - Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 - Satin-Like Finish	20 to 35	min. 35
Gloss Level 5 - Traditional Semi-Gloss Finish	35 to 70	
Gloss Level 6 - Traditional Gloss	70 to 85	
Gloss Level 7 - High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated.

3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

3.02 GENERAL

- .1 Perform preparation and operations for interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

3.03 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable to be painted in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of HWDSB.
 - .2 Inform HWDSB of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from HWDSB.
- .2 Interior repainting work: inspected by MPI Accredited Paint Inspection Agency (inspector) acceptable to specifying authority and local Painting Contractor's Association. Painting contractor to notify Paint Inspection Agency minimum of [one] week prior to commencement of work and provide copy of project repainting specification and Finish Schedule.
- .3 Interior surfaces requiring repainting: inspected by both painting contractor and Paint Inspection Agency who will notify HWDSB in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.
- .4 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .5 Maximum moisture content as follows:
 - .1 Stucco, plaster and gypsum board: 12 %.
 - .2 Concrete: 12 %.

3.04 PREPARATION

- .1 Protection (not applicable to new painting work):
 - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by HWDSB.
 - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
 - .3 Protect factory finished products and equipment.
 - .4 Protect passing pedestrians, building occupants and general public in and about the building.
- .2 Surface Preparation (not applicable to new painting work):
 - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
 - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

- .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of HWDSB.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
 - .1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 - .2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - .4 Allow surfaces to drain completely and allow to dry thoroughly.
 - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
 - .6 Use trigger operated spray nozzles for water hoses.
 - .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
- .4 Clean following surfaces with high pressure water washing.
- .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .6 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
 - .1 Apply sealer to MPI #36 over knots, pitch, sap and resinous areas
 - .2 Apply wood filler to nail holes and cracks.
 - .3 Tint filler to match stains for stained woodwork.
- .7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
- .8 Carried out during shop priming: clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by blowing with clean dry compressed air or vacuum cleaning.
- .9 Touch up of shop primers with primer as specified.
- .10 Do not apply paint until prepared surfaces have been accepted by HWDSB.

3.05 EXISTING CONDITIONS

- .1 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test" and report findings to HWDSB. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .2 Maximum moisture content as follows:
 - .1 Stucco: 12 %.
 - .2 Concrete: 12 %.

3.06 APPLICATION

- .1 Method of application to be as approved by JASON FUNG ARCHITECT INC.. Apply paint by brush and roller. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
 - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
 - .2 Work paint into cracks, crevices and corners.
 - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
 - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
 - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- .4 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .6 Sand and dust between coats to remove visible defects.
- .7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .8 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .9 Finish closets and alcoves as specified for adjoining rooms.
- .10 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.
- .11 Metal grid, drywall, plaster, concrete, and concrete masonry units; if sprayed, must be back rolled.

3.07 MECHANICAL/ELECTRICAL EQUIPMENT

- .1 Paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated.
- .2 Boiler room, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.
- .3 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .4 Do not paint over nameplates.
- .5 Keep sprinkler heads free of paint.
- .6 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .7 Paint fire protection piping red.
- .8 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .9 Paint natural gas piping yellow.
- .10 Paint both sides and edges of backboards for telephone and electrical equipment before installation.

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

- .11 Do not paint interior transformers and substation equipment.

3.08 SITE TOLERANCES

- .1 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

3.09 SITE QUALITY CONTROL

- .1 Interior painting and decorating work to be inspected by a MPI Accredited Paint Inspection Agency (inspector) acceptable to specifying authority and local Painting Contractor's Association. Painting contractor will notify Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .2 Interior surfaces requiring painting to be inspected by Paint Inspection Agency who will notify HWDSB and General Contractor in writing of defects or problems, prior to commencing painting work, or after prime coat shows defects in substrate.
- .3 Where "special" painting, coating or decorating system applications (i.e. elastomeric coatings) or non- MPI listed products or systems are to be used, paint or coating manufacturer will provide as part of this work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to HWDSB.
- .4 Standard of Acceptance:
 - .1 Ceilings: no defects visible from floor at 45 degrees degrees to surface when viewed using final lighting source.
 - .2 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .5 Advise HWDSB when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .6 Cooperate with inspection firm and provide access to areas of work.
- .7 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by HWDSB.

3.10 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .3 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
- .4 Additional or excess material to be stored safely and returned to HWDSB unless instructed otherwise after completion of work.

3.11 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of HWDSB. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by HWDSB.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Section 26 08 00 – Commissioning of Electrical
- .2 Section 26 09 24 – Lighting Control Devices – Low Voltage

I.02 DEFINITIONS

- .1 Electrical and electronic terms: unless otherwise specified or indicated, terms used in these specifications, and on drawings, are those defined by IEEE SPI 122.

I.03 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CSA C22.1-12, Canadian Electrical Code, Part I (22nd Edition), Safety Standard for Electrical Installations.
- .2 Institute of Electrical and Electronics (IEEE)/National Electrical Safety Code Product Line (NESC)
 - .1 IEEE SPI 122, The Authoritative Dictionary of IEEE Standards Terms, 7th Edition.

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Submit for review single line electrical diagrams and locate as indicated.
 - .1 Electrical distribution system in main electrical room.
- .4 Certificates:
 - .1 Provide CSA certified equipment and material.
 - .2 Submit test results of installed electrical systems and instrumentation.
 - .3 Permits and fees: in accordance with General Conditions of contract.
 - .4 Submit, upon completion of Work, load balance report as described in PART 3 - LOAD BALANCE.
 - .5 Submit certificate of acceptance from authority having jurisdiction upon completion of Work to JASON FUNG ARCHITECT INC. and HWDSB.

I.05 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for incorporation into manual.
 - .1 Provide for each system and principal item of equipment as specified in technical sections for use by operation and maintenance personnel.
 - .2 Operating instructions to include following:

- .1 Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.
- .2 Start up, proper adjustment, operating, lubrication, and shutdown procedures.
- .3 Safety precautions.
- .4 Procedures to be followed in event of equipment failure.
- .5 Other items of instruction as recommended by manufacturer of each system or item of equipment.
- .3 Print or engrave operating instructions and frame under glass or in approved laminated plastic.
- .4 Post instructions where directed.
- .5 For operating instructions exposed to weather, provide weather-resistant materials or weatherproof enclosures.
- .6 Ensure operating instructions will not fade when exposed to sunlight and are secured to prevent easy removal or peeling.

1.06 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

2 PRODUCTS

2.01 DESIGN REQUIREMENTS

- .1 Operating voltages: to CAN3-C235
- .2 Motors, electric heating, control and distribution devices and equipment to operate satisfactorily at 60 Hz within normal operating limits established by above standard.
 - .1 Equipment to operate in extreme operating conditions established in above standard without damage to equipment.
- .3 Language operating requirements: provide identification labels for control items in English and French.
- .4 Use one label for both languages.

2.02 MATERIALS AND EQUIPMENT

- .1 Provide material and equipment in accordance with manufacturer's written instructions.
- .2 Material and equipment to be CSA certified.
- .3 Factory assemble control panels and component assemblies.

2.03 ELECTRIC MOTORS, EQUIPMENT AND CONTROLS

- .1 Not used

2.04 WARNING SIGNS

- .1 Warning Signs: in accordance with requirements of authority having jurisdiction.
- .2 Decal signs, minimum size 175 x 250 mm.

2.05 WIRING TERMINATIONS

- .1 Ensure lugs, terminals, screws used for termination of wiring are suitable for either copper or aluminum conductors.

2.06 EQUIPMENT IDENTIFICATION

- .1 Not used.

2.07 WIRING IDENTIFICATION

- .1 Identify wiring with permanent indelible identifying markings, numbered coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.
- .2 Maintain phase sequence and colour coding throughout.
- .3 Colour coding: to CSA C22.1
- .4 Use colour coded wires in communication cables, matched throughout system.

2.08 CONDUIT AND CABLE IDENTIFICATION

- .1 Colour code conduits, boxes and metallic sheathed cables.
- .2 Code with plastic tape or paint at points where conduit or cable enters wall, ceiling, or floor, and at 15 m intervals.
- .3 Colours: 25 mm wide prime colour and 20 mm wide auxiliary colour.

2.09 FINISHES

- .1 Shop finish metal enclosure surfaces by application of rust resistant primer inside and outside, and at least two coats of finish enamel.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for installation in accordance with manufacturer's written instructions.
- .2 Inform HWDSB and JASON FUNG ARCHITECT INC. of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied JASON FUNG ARCHITECT INC..

3.02 INSTALLATION

- .1 Do complete installation in accordance with CSA C22.1 except where specified otherwise
- .2 Do overhead and underground systems in accordance with CAN/CSA-C22.3 No.1 except where specified otherwise

3.03 NAMEPLATES AND LABELS

- .1 Ensure manufacturer's nameplates, CSA labels and identification nameplates are visible and legible after equipment is installed

3.04 CONDUIT AND CABLE INSTALLATION

- .1 Install cables, conduits and fittings embedded or plastered over, close to building structure so furring can be kept to minimum.

3.05 LOCATION OF OUTLETS

- .1 Not Used.

3.06 MOUNTING HEIGHTS

- .1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.
- .2 If mounting height of equipment is not specified or indicated, verify before proceeding with installation.
- .3 Install electrical equipment at following heights unless indicated otherwise.
 - .1 Local switches: 1400 mm.
 - .2 Wall receptacles:
 - .1 General: 300 mm.
 - .3 Panelboards: as required by Code or as indicated.
 - .4 Fire alarm stations: 1500 mm.
 - .5 Fire alarm bells: 2100 mm.
 - .6 Wall mounted speakers: 2100 mm.
 - .7 Clocks: 2100 mm.

3.07 CO-ORDINATION OF PROTECTIVE DEVICES

- .1 Ensure circuit protective devices such as overcurrent trips, relays and fuses are installed to required values and settings.

3.08 FIELD QUALITY CONTROL

- .1 Load Balance:
 - .1 Measure phase current to panelboards with normal loads (lighting) operating at time of acceptance; adjust branch circuit connections as required to obtain best balance of current between phases and record changes.
 - .2 Measure phase voltages at loads and adjust transformer taps to within 2% of rated voltage of equipment.
 - .3 Provide upon completion of work, load balance report as directed in PART I - ACTION

AND INFORMATIONAL SUBMITTALS, phase and neutral currents on panelboards, dry-core transformers and motor control centres, operating under normal load, as well as hour and date on which each load was measured, and voltage at time of test.

- .2 Conduct following tests in accordance with Section 01 45 00 - Quality Control.
 - .1 Power generation and distribution system including phasing, voltage, grounding and load balancing.
 - .2 Circuits originating from branch distribution panels.
 - .3 Lighting and its control.
 - .4 Motors, heaters and associated control equipment including sequenced operation of systems where applicable.
 - .5 Systems: fire alarm, communications.
 - .6 Insulation resistance testing:
 - .1 Megger circuits, feeders and equipment up to 350 V with a 500 V instrument.
 - .2 Megger 350-600 V circuits, feeders and equipment with a 1000 V instrument.
 - .3 Check resistance to ground before energizing.
- .3 Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.

3.09 SYSTEM STARTUP

- .1 Instruct HWDSB and operating personnel in operation, care and maintenance of systems, system equipment and components.
- .2 Arrange and pay for services of manufacturer's factory service engineer to supervise start-up of installation, check, adjust, balance and calibrate components and instruct operating personnel.
- .3 Provide these services for such period, and for as many visits as necessary to put equipment in operation, and ensure that operating personnel are conversant with aspects of its care and operation.

3.10 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 This Section includes requirements for selective demolition and removal of electrical communications and safety and security components including removal of conduit, junction boxes, and incidentals required to complete work described in this Section ready for new construction.

I.02 RELATED REQUIREMENTS

- .1 15 Section 02 41 19 - Selective Demolition
- .2 Section 02 81 00 - Hazardous Materials
- .3 HBMA prepared by PINCHIN LTD.

I.03 DEFINITIONS

- .1 Demolish: Detach items from existing construction and legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.
- .2 Remove: Planned deconstruction and disassembly of electrical items from existing construction including removal of conduit, junction boxes, cabling and wiring from electrical component to panel taking care not to damage adjacent assemblies designated to remain; legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.
- .3 Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Inform HWDSB and JASON FUNG ARCHITECT INC. of electrical items that are unable to be reused.
- .4 Existing to Remain: Existing items of construction that are not removed and that are not otherwise indicated as being removed and salvaged, or removed and reinstalled.
- .5 Hazardous Substances: Dangerous substances, dangerous goods, hazardous commodities and hazardous products may include asbestos, mercury and lead, PCB's, poisons, corrosive agents, flammable substances, radioactive substances, or other material that can endanger human health or wellbeing or environment if handled improperly as defined by Federal Hazardous Products Act including latest amendments.

I.04 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA S350 M1980, Code of Practice for Safety in Demolition of Structures

I.05 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Action Submittals: Provide in accordance with Section 01 33 00 - Submittal Procedures before starting work of this Section:
 - .1 Landfill Records: Indicate receipt and acceptance of selective demolition waste.

I.06 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate work of this Section to avoid interference with work by other Sections.

- .2 Scheduling: Account for HWDSB's continued occupancy requirements during selective demolition with Section 02 41 19 – Selective Demolition and schedule staged occupancy and worksite activities as a defined Activity in Section 01 32 16.19 - Construction Progress Schedule - Bar (GANTT) Chart.

I.07 QUALITY ASSURANCE

- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

I.08 SITE CONDITIONS

- .1 Existing Conditions: Condition of materials identified as being salvaged or demolished are based on their observed condition on date that tender is accepted.
 - .1 Hazardous substances will be removed by a hazardous abatement specialist engaged by HWDSB before start of Work.
- .3 Existing Hazardous Substances: PINCHIN LTD. has performed a hazardous substances assessment and identified materials requiring abatement as follows:
 - .1 Hazardous substances are as defined in Hazardous Products Act.
 - .2 Hazardous substances will be removed by Abatement Contractor as a part of Contract before starting Work in accordance with work results described in Related Requirements listed above.
- .4 Discovery of Hazardous Substances: It is not expected that Hazardous Substances will be encountered in Work; immediately notify HWDSB, JASON FUNG ARCHITECT INC. and PINCHIN LTD. if materials suspected of containing hazardous substances are encountered and perform following activities:
 - .1 Refer to Section 01 41 00 - Regulatory Requirements for directives associated with specific material types.
 - .2 Hazardous substances will be as defined in Hazardous Products Act.
 - .3 Stop work in area of suspected hazardous substances.
 - .4 Take preventative measures to limit users' and workers' exposure, provide barriers and other safety devices and do not disturb.
 - .5 Hazardous substances will be removed by Abatement Contractor under a separate contract or as a change to Work.
 - .6 Proceed only after written instructions have been received HWDSB and JASON FUNG ARCHITECT INC..

I.09 SALVAGE AND DEBRIS MATERIALS

- .1 Demolished items become Contractor's property and will be removed from Project site; except for items indicated as being reused, salvaged, or otherwise indicated to by HWDSB or within the Architectural drawings.
- .2 Carefully remove materials and items designated for salvage and store in a manner to prevent damage or devaluation of materials.
 - .1 Leave main electrical distribution panel in place; panel can be used for temporary construction power for this and subsequent contracts; coordinate temporary power connections with HWDSB.

2 PRODUCTS

2.01 MATERIALS

- .1 General Patching and Repair Materials: Refer to Section Section 02 41 19 - Selective Demolition for listing of patching and repair materials incidental to removal or demolition of components associated with work of this Section.
- .2 Electrical Repair Materials: Use only new materials, CSA or ULC labelled as appropriate and matching components remaining after work associated with components identified for removal or demolition are completed
- .3 Fire stopping Repair Materials: Use fire stopping materials compatible with existing fire stopping systems where removal or demolition work affects rated assemblies, restore to match existing fire rated performance.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Existing Conditions: Visit site, thoroughly examine and become familiar with conditions that may affect the work of this Section before tendering the Bid; JASON FUNG ARCHITECT INC. will not consider claims for extras for work or materials necessary for proper execution and completion of the contract that could have been determined by a site visit.

3.02 PREPARATION

- .1 Protection of Existing Systems to Remain: Protect systems and components indicated to remain in place during selective demolition operations and as follows:
 - .1 Prevent movement and install bracing to prevent settlement or damage of adjacent services and parts of existing buildings scheduled to remain.
 - .2 Notify HWDSB and JASON FUNG ARCHITECT INC. and cease operations where safety of buildings being demolished, adjacent structures or services appears to be endangered and await additional instructions before resuming demolition work specified in this Section.
 - .3 Prevent debris from blocking drainage inlets.
 - .4 Protect mechanical systems that will remain in operation.
- .2 Protection of Building Occupants: Sequence demolition work so that interference with the use of the building by the HWDSB and users is minimized and as follows:
 - .1 Prevent debris from endangering safe access to and egress from occupied buildings.
 - .2 Notify HWDSB and JASON FUNG ARCHITECT INC. and cease operations where safety of occupants appears to be endangered and await additional instructions before resuming demolition work specified in this Section.

3.03 EXECUTION

- .1 Demolition and Removal: Coordinate requirements of this Section with information contained in Section 02 41 19 Selective Demolition and as follows:
 - .1 Disconnect electrical circuits and panel feeders; maintain electrical service and main distribution panel as is, ready for subsequent Work.

- .2 Remove existing luminaires, electrical devices and equipment including associated conduits, boxes, wiring, and similar items unless specifically noted otherwise.
- .3 Perform demolition work in a neat and workmanlike manner:
 - .1 Remove tools or equipment after completion of work, and leave site clean and ready for subsequent renovation work.
 - .2 Repair and restore damages caused as a result of work of this Section to match existing materials and finishes.
- .4 Place weatherproof blank cover plates on exterior outlet boxes remaining after demolition and removal activities.
- .5 Remove existing conduits, boxes, cabling and wiring associated with removed luminaires, electrical devices and equipment.
- .6 Grind off conduits and make flush with surface of concrete where conduits are cast into concrete; seal open ends of conduit with silicone sealant and leave in place.
- .7 Seal open ends of conduit with silicone sealant and leave in place where they are inaccessible or cannot be removed without damaging adjacent construction.

3.04 CLOSEOUT ACTIVITIES

- .1 Demolition Waste Disposal: Arrange for legal disposal and remove demolished materials to accredited provincial landfill site or alternative disposal site (recycle centre) except where explicitly noted otherwise for materials being salvaged for re use in new construction.
- .2 Hazardous Substances Disposal: Arrange for disposal of hazardous substances in accordance with requirements of Section 02 81 00 - Hazardous Materials and Absestos and refer to the Hazardous Building Materials Assessment (Pre-construction) report prepared by PINCHIN LTD..

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Section 26 05 00 – Common Work Results for Electrical.

I.02 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CAN/CSA C22.2 No. 18, Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware, A National Standard of Canada.
 - .2 CSA C22.2 No. 45, Rigid Metal Conduit.
 - .3 CSA C22.2 No. 56-04, Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.
 - .4 CSA C22.2 No. 83, Electrical Metallic Tubing.
 - .5 CSA C22.2 No. 211.2, Rigid PVC (Unplasticized) Conduit.
 - .6 CAN/CSA C22.2 No. 227.3-05, Nonmetallic Mechanical Protection Tubing (NMPT), A National Standard of Canada (February 2006).

I.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product data: submit manufacturer's printed product literature, specifications and datasheets.
 - .1 Submit cable manufacturing data.
- .3 Quality assurance submittals:
 - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

I.04 WASTE MANAGEMENT AND DISPOSAL

- .1 Place materials defined as hazardous or toxic waste in designated containers.
- .2 Ensure emptied containers are sealed and stored safely for disposal away from children.

2 PRODUCTS

2.01 CABLES AND REELS

- .1 Provide cables on reels or coils.
 - .1 Mark or tag each cable and outside of each reel or coil, to indicate cable length, voltage rating, conductor size, and manufacturer's lot number and reel number.
- .2 Each coil or reel of cable to contain only one continuous cable without splices.
- .3 Identify cables for exclusively dc applications.
- .4 Reel and mark shielded cables rated 2,001 volts and above.

2.02 CONDUITS

- .1 Epoxy coated conduit: to CSA C22.2 No. 45, with zinc coating and corrosion resistant epoxy finish inside and outside
- .2 Electrical metallic tubing (EMT): to CSA C22.2 No. 83, with couplings.
- .3 Flexible metal conduit: to CSA C22.2 No. 56, steel.
- .4 Flexible pvc conduit: to CAN/CSA-C22.2 No. 227.3.

2.03 CONDUIT FASTENINGS

- .1 One hole malleable iron straps to secure surface conduits NPS 2 50 mm and smaller.
 - .1 Two hole steel straps for conduits larger than NPS 2 50 mm.
- .2 Beam clamps to secure conduits to exposed steel work.
- .3 Threaded rods, 6 mm diameter, to support suspended channels.

2.04 CONDUIT FITTINGS

- .1 Fittings: to CAN/CSA C22.2 No. 18, manufactured for use with conduit specified. Coating: same as conduit.
- .2 Ensure factory “ells” where 90 degrees bends for NPS 1 25 mm and larger conduits.
- .3 Watertight connectors and couplings for EMT.
 - .1 Set-screws are not acceptable.

2.05 EXPANSION FITTINGS FOR RIGID CONDUIT

- .1 Weatherproof expansion fittings with internal bonding assembly suitable for 100 200 mm linear expansion.
- .2 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection.
- .3 Weatherproof expansion fittings for linear expansion at entry to panel.

2.06 FISH CORD

- .1 Not used.

3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.02 INSTALLATION

- .1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
- .2 Conceal conduits except in mechanical and electrical service rooms in unfinished areas.

- .3 Minimum conduit size for lighting and power circuits: NPS 3/4 19 mm.
- .4 Remove and replace blocked conduit sections.
 - .1 Do not use liquids to clean out conduits.
- .5 Dry conduits out before installing wire.

3.03 SURFACE CONDUITS

- .1 Run parallel or perpendicular to building lines.
- .2 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.
- .4 Group conduits wherever possible on suspended and surface channels.
- .5 Do not pass conduits through structural members except as indicated.
- .6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

3.04 CONCEALED CONDUITS

- .1 Run parallel or perpendicular to building lines.
- .2 Do not install horizontal runs in masonry walls.

3.05 CONDUITS IN CAST-IN-PLACE CONCRETE

- .1 Not used.

3.06 CONDUITS IN CAST-IN-PLACE SLABS ON GRADE

- .1 Not used.

3.07 CONDUITS UNDERGROUND

- .1 Not used.

3.08 CLEANING

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 This Section specifies the Contractor's responsibilities related to commissioning of electrical systems and their contribution to the overall commissioning work specified in the relevant Technical Sections of Division 01 of the Contract Documents.
- .2 Construction Team: Contractor is responsible for performing tests and verification activities specified in the relevant Sections of Division 26 of the Contract Documents, and submitting reports to HWDSB and JASON FUNG ARCHITECT INC..
 - .1 Subcontractors: electrical subcontractors participate in commissioning activities in coordination with site quality control requirements for Work they are providing.
 - .3 Contractor coordinates the work of subcontractors with the commissioning requirements of this Section.
- .3 Commissioning Authority (CxA): the CxA may assign a commissioning specialist with expertise in building electrical systems, to undertake its commissioning responsibilities related to this Section.
- .4 HWDSB will designate a person to represent the interests of the facility related to work specified in the relevant Sections of Division 26.
 - .1 HWDB may designate an additional representative to participate in the commissioning process and facilitate the transfer of electrical systems to the facility's O&M staff.
- .5 The requirements of this Section do not replace testing requirements specified in the relevant Sections of Division 26, or reporting activities to demonstrate compliance with electrical code requirements to the authorities having jurisdiction.

I.02 RELATED REQUIREMENTS

- .1 Not used.

I.03 ACRONYMS

- .1 BMM - Building Management Manual
- .2 CT – Construction Team
- .3 Cx - Commissioning
- .4 CxA – Commissioning Authority
- .5 EMCS - Energy Monitoring and Control Systems
- .6 FPT – Functional Performance Testing
- .7 O&M - Operation and Maintenance

I.04 DEFINITIONS

- .1 Construction Team: the term Construction Team is used in this Section to designate inclusively the Contractor, subcontractors, manufacturers/suppliers and other support disciplines that are responsible for construction/installation of the Work specified in these specifications.
- .2 Cx Plan: a document developed under the responsibility of the CxA to specify the project's commissioning requirements.

- .4 Cx Team: the commissioning team consists of project members that participate in the development, refinement and execution of the Cx Plan.

I.05 REFERENCE STANDARDS

- .1 CSA Group (CSA):
 - .1 CSA Z320-11, Building Commissioning

I.06 ADMINISTRATIVE REQUIREMENTS

- .1 Construction Team – Cx Representative: Contractor to designate a person from the Construction Team to review and coordinate commissioning activities specified in this Section.
 - .1 Representative to be acceptable to HWDSB with the following qualifications:
 - .1 Technical personnel with a minimum of 5 years' experience in construction, testing and commissioning of electrical systems.
 - .2 Site supervisor or project manager within the Construction Team, with direct responsibilities for supervising the execution of work specified in the relevant Sections of Division 26.
- .2 Coordination: coordinate the responsibilities of the Construction Team in the Cx process with the responsibilities of other participants that form part of the Cx Team.
 - .1 Coordinate the participation of electrical subcontractors, inspection/testing agencies and manufacturers in reviewing the Cx Plan, submittals and in assisting testing and demonstration activities related to their work.
 - .2 Coordinate commissioning activities with execution of the work during the course of construction to allow Cx participants and the authority having jurisdiction (AHJ) to fulfill their responsibilities for witnessing tests and reviewing installation before concealment of work.
 - .3 Coordinate start-up of electrical motors supplied as specified in the relevant Sections of other Divisions of the Contract Documents, with the equipment supplier.
 - .4 Review interfaces with other work to ensure submittals and installation requirements are coordinated with other trades, including:
 - .1 Electrical distribution serving equipment supplied as specified in the relevant Sections of other Divisions of the Contract Documents, including disconnects and starters.
 - .2 Interlocks between generator equipment and generator room ventilation systems.
 - .3 Interlocks between emergency power systems and systems considered life safety such as elevator systems and fire alarm systems.
- .3 Notification: notify the HWDSB and JASON FUNG ARCHITECT INC. of activities associated with the commissioning process.

I.07 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Electrical Cx Schedule:
 - .1 Submit proposed schedule before start of commissioning conferences indicating key activities critical to the commissioning process including:
 - .1 Inspection of electrical systems.

- .2 Commissioning phases: static verification, start-up, functional performance testing, systems orientation, O&M manuals submissions, training sessions.
- .3 Integrated Testing activities.
- .2 Review the proposed schedule through the course of the work and notify the HWDSB and JASON FUNG ARCHITECT INC. of modifications required.
- .1 Approved Cx Forms: CxA reviews and approves the final format to use through the commissioning process.
 - .1 Review the forms proposed by CxA and submit comments with proposed adjustments.
 - .2 Contractor may submit its own preferred format for review by the CxA. This may include manufacturer provided checklists.
- .2 Submit completed static verification and start-up checklists within 48 hours of completion of verification of equipment or system.
- .3 Testing Equipment: submit a list of proposed testing equipment for performing electrical Cx activities and related tests.
- .4 Site Quality Control Submittals: submit manufacturers certificates and reports demonstrating compliance of Work, as specified in the relevant Sections of Division 26.

1.08 CLOSEOUT SUBMITTALS

- .1 Submit O&M data and as-built information in accordance with Section 01 78 00 – Closeout Submittals.
- .1 Site Modifications: record changes to installations, system configuration and/or controls that were made during the commissioning process to meet the required performance of electrical equipment and systems.

2 PRODUCTS

2.01 EQUIPMENT

- .1 Furnish special tools or equipment required for:
 - .1 Verifying or adjusting equipment/system components.
 - .2 Accessing equipment, enclosures or control cabinets.
 - .3 Interfacing with equipment controls or integrated system diagnostics.
- .2 Furnish instruments and equipment required to perform testing and validate performance of electrical systems through the commissioning process or as specified in the relevant Sections of Division 26.

3 EXECUTION

3.01 STATIC VERIFICATION

- .1 Perform static verification of components, equipment and systems in coordination with performing the following activities:
 - .1 Verify installation and connection of equipment, sub-systems and systems.

- .2 Confirm accessibility to electrical equipment and components for inspection and O&M activities.
- .3 Record equipment and systems information including: manufacturer, model number, serial number and rated capacities.
- .4 Confirm proper location of lighting control devices as per design and to achieve intended functionality.
- .5 Confirm completion of labelling and identification of electrical equipment.
- .6 Confirm identification of circuits in each distribution panel including: circuit labels and a clear panel legend showing the load and a short description of each circuit.
- .7 Confirm completion and documentation of equipment prestart-up tests, including manufacturer's factory tests.
- .8 Confirm adequate protection of electrical systems during construction.
- .9 Confirm electrical systems and service entrance are protected from major precipitation events and minor flooding.
- .10 Confirm electrical cabinets and enclosures are equipped with protective covers.
- .11 Confirm seismic and vibration controls for electrical equipment/systems are installed in accordance with design details and manufacturer's recommendations.

3.02 START-UP

- .1 Refer to Section 01 91 13 - General Commissioning Requirements for commissioning requirements.
- .2 Perform start-up of equipment and systems in coordination with performing the following activities:
 - .1 Initial site energization.
 - .2 Contractor/manufacturer start-up of equipment.
 - .3 Start-up of electrical systems including site electrical tests, and verification and adjustment of overload trips and other protection devices, based on the site's electrical coordination study.
 - .4 Electrical start-up of mechanical equipment including measuring voltage and amperage, and verifying and adjusting overload trips and other protection devices.
 - .5 Site electrical tests including:
 - .1 Measurement of voltage and voltage drop at major equipment.
 - .2 Confirming phase rotation.
 - .3 Megger testing to confirm proper insulation resistance of electrical circuits, feeders and equipment.
 - .4 Harmonic measurements.
 - .5 Power factor measurements.
 - .6 Verification of proper load balancing.

3.03 FUNCTIONAL PERFORMANCE TESTING

- .1 Perform Functional Performance Testing (FPT) on electrical equipment and systems as directed by HWDSB and JASON FUNG ARCHITECT INC..
- .2 Operate equipment as directed by HWDSB and JASON FUNG ARCHITECT INC. to demonstrate

and validate that equipment, sub-systems and systems function and perform in accordance with design requirements.

.3 FPT activities include:

- .1 Verify proper operation of electrical systems and equipment in the following modes of operation:**
 - .1 Systems operation on normal power.**
 - .2 Systems operation on emergency power.**
 - .3 Normal operation – no alarm conditions.**
 - .4 Systems operation in alarm condition.**
 - .5 Manual operation mode.**
 - .6 Automatic operation mode.**
- .2 Verify operation of generator and emergency power systems including:**
 - .1 Performance and switching operation of generator equipment, automatic transfer switches and uninterruptible power systems.**
 - .2 Verify generator interface to the generator ventilation system, fire alarm system, elevator equipment, fire suppression system and building EMCS.**
- .3 Verify operation of safety cutouts, alarms and interlocks.**
- .4 Verify operation of emergency lights.**
- .5 Confirm alarms are generated and transmitted effectively to the intended notification system (e.g. pilot light, control panel, EMCS, remote surveillance system).**
- .6 Confirm and optimize electrical peak shaving controls.**
- .7 Verify full integration of on-site power generation systems in all modes of operation.**
- .8 Verify metering equipment is calibrated and properly reporting energy data on displays and integrated systems.**
- .9 Conduct receptacle testing.**
- .10 Verify illumination measurements and adjust lighting output levels to achieve design levels.**
- .11 Optimize interior and exterior lighting controls including scheduling, occupancy sensor settings and daylight sensor calibration.**
- .12 Verify system response to the following emergency conditions:**
 - .1 Full or partial loss of grid power.**
 - .2 Loss of fuel to back-up power generation systems.**

3.04 CX OF INTEGRATED SYSTEMS

- .1 Not used.**

3.05 SITE QUALITY CONTROL

- .1 Manufacturer's Site Services: obtain certificates and reports from manufacturer verifying compliance of Work and submit Manufacturer's Site Reports as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.**
 - .1 Provide manufacturer's site services to complete start-up activities and assist in Functional**

Performance Testing as specified in the relevant Sections of Division 26.

3.06 CLOSEOUT ACTIVITIES

- .I Corrections: Provide equipment, materials and labor as required to correct installation and/or equipment deficiencies identified through the commissioning process.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 Section Includes:
 - .1 Materials and installation for low voltage control system designed to provide remote switching of lighting loads by use of:
 - .1 Low voltage momentary contact switches.
 - .2 Manual switch control.

I.02 RELATED REQUIREMENTS

- .1 Section 26 05 00 - Common Work Results for Electrical
- .2 Section 26 50 00 - Lighting

I.03 REFERENCE STANDARDS

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS):
 - .1 Safety Data Sheets (SDS)
- .2 Illuminating Engineering Society (IES) Standards
- .3 ASHRAE Standards
 - .1 ASHRAE 90.1- Energy Standard for Buildings except Low-Rise Residential Buildings

I.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures. Include product characteristics, performance criteria, and limitations.
 - .1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Safety Data Sheets (SDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC content.
- .2 Shop Drawings:
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Shop drawings: Submit drawings stamped and signed by professional engineer registered or licensed in Ontario, Canada.
- .3 Closeout Submittals:
 - .1 Submit maintenance data in accordance with Section 01 78 00 - Closeout Submittals.
- .4 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Test reports:
 - .1 Submit certified test reports indicating compliance with specifications for specified performance characteristics and physical properties.

- .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .3 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.05 QUALITY ASSURANCE

- .1 Not used.

1.06 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store, and handle in accordance with Section 01 61 00 - Common Product Requirements.

2 PRODUCTS

2.01 SUSTAINABLE REQUIREMENTS

- .1 Not used.

2.02 MATERIALS

- .1 Control system: by one manufacturer and assembled from compatible components.
- .2 BAS: by Siemens or approved HWDSB alternative.

2.03 REMOTE CONTROL SWITCHES

- .1 Single pole, double throw, momentary contact, standard duty, 25 V, double push-button.

2.04 LOW VOLTAGE RELAYS

- .1 Electrically operated by momentary impulse, mechanically latched until activated.
- .2 Two coil solenoid type with one coil to close relay contacts and one coil to open relay contacts.
- .3 Operating voltage: 24 V, AC.
- .4 Load contacts: 20 A, 120 V, AC.
- .5 Auxiliary contacts for pilot light.
- .6 Coloured pre-stripped leads.

2.05 CONTROL TRANSFORMER

- .1 Low voltage power Class 2, input 120 V, AC, 60 Hz, output 20 VA at 24 V.

2.06 RECTIFIER

- .1 Silicon type: 24 V, AC, 60 Hz input, 20 A intermittent duty output.

2.07 MANUAL CONTROL

- .1 Eight circuit manual master selector switch mounted in 100 mm square box with:

- .1 Master lock-out switch.
- .2 Individual red jewelled pilot lights.
- .3 Nine circuit manual dial-type master selector.
- .4 Twelve circuit manual dial-type master selector.

2.08 MOTOR OPERATED MASTER CONTROL

- .1 Not used.

3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.
- .2 Connect existing corridor lighting to BAS supplied by Siemens or approved HWDSB alternative.

3.02 INSTALLATION

- .1 Locate and install equipment in accordance with manufacturer's recommendations and as indicated.
- .2 BAS to control all corridor lights ON/OFF based off security panel output through a H/A/O (Hand/Auto/Off) contactor.
- .3 Hand mode - Corridor lights are ON regardless of BAS command.
- .4 Off mode - Corridor lights are OFF regardless of BAS command.
- .5 Auto mode – Corridor lights turn ON and OFF based on BAS command. If the system is armed, then corridor lights are OFF. If system is disarmed, all corridor lights are ON.
- .6 Motion sensors on corridor lights dim to 50% if no motion is detected after 10 minutes.
- .7 Upon a triggered burglar alarm when the system is armed, alarm output is sent to BAS. BAS will then turn ON all corridor lights until the alarm is cleared or the system is disarmed.
- .8 Security panel to send BAS the armed/disarmed status and alarm information. Lights are to be programmed to operate based on the above sequence.

3.03 SITE QUALITY CONTROL

- .1 Site Tests:
 - .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Actuate control units in presence of HWDSB and JASON FUNG ARCHITECT INC. to demonstrate lighting circuits are controlled as designated.
- .3 Schedule site visits, to review Work, as directed in PART I - QUALITY ASSURANCE.

3.04 CLEANING

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Section 26 05 00 - Common Work Results for Electrical

I.02 REFERENCE STANDARDS

- .2 CSA Group (CSA)
 - .1 CSA C22.2 No.42-10, General Use Receptacles, Attachment Plugs and Similar Devices.
 - .2 CAN/CSA C22.2 No.42., I Cover Plates for Flush-Mounted Wiring Devices (Bi-national standard, with UL 514D).
 - .3 CSA C22.2 No.55, Special Use Switches.
 - .4 CSA C22.2 No.111-10, General-Use Snap Switches (Bi-national standard, with UL 20).

I.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

I.04 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for wiring devices for incorporation into manual.

I.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect wiring devices from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

2 PRODUCTS

2.01 SWITCHES

- .1 Switches to: CSA C22.2 No.55 and CSA C22.2 No.111.
- .2 Manually-operated general purpose AC switches with following features:
 - .1 Terminal holes approved for No. 10 AWG wire.
 - .2 Silver alloy contacts.
 - .3 Urea or melamine moulding for parts subject to carbon tracking.

- .4 Suitable for back and side wiring.
- .5 Ivory toggle.
- .3 Switches of one manufacturer throughout project.

2.02 RECEPTACLES

- .1 Duplex receptacles, CSA type 5-15 R, 125 V, 15 A, U ground, to: CSA C22.2 No.42 with following features:
 - .1 Ivory urea moulded housing.
 - .2 Suitable for No. 10 AWG for back and side wiring.
 - .3 Break-off links for use as split receptacles.
 - .4 Eight back wired entrances, four side wiring screws.
 - .5 Triple wipe contacts and rivetted grounding contacts.
- .2 Single receptacles CSA type 5-15 R, 125 V, 15 A, U ground with following features:
 - .1 Ivory urea moulded housing.
 - .2 Suitable for No. 10 AWG for back and side wiring.
 - .3 Four back wired entrances, 2 side wiring screws.
- .3 Other receptacles with ampacity and voltage as indicated.
- .4 Receptacles of one manufacturer throughout project.

2.03 SPECIAL WIRING DEVICES

- .1 Special wiring devices:
 - .1 Clock hanger outlets, 15 A, 125 V, 3 wire, grounding type, suitable for No. 10 AWG for installation in flush outlet box.

2.04 WIRING DEVICES FOR COMPUTER ROOMS

- .1 Not used.

2.05 COVER PLATES

- .1 Cover plates for wiring devices to: CSA C22.2 No.42.1.
- .2 Sheet steel utility box cover for wiring devices installed in surface-mounted utility boxes.
- .3 Stainless steel, vertically brushed, 1 mm thick cover plates plastic ivory cover plates, thickness 2.5 mm for wiring devices mounted in flush-mounted outlet box.
- .4 Sheet metal cover plates for wiring devices mounted in surface-mounted FS or FD type conduit boxes.
- .5 Weatherproof double lift spring-loaded cast aluminum cover plates, complete with gaskets for duplex receptacles as indicated.
- .6 Weatherproof spring-loaded cast aluminum cover plates complete with gaskets for single receptacles or switches.

2.06 SOURCE QUALITY CONTROL

- .1 Cover plates from one manufacturer throughout project.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for wiring devices installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Inform HWDSB and JASON FUNG ARCHITECT INC. of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from JASON FUNG ARCHITECT INC..

3.02 INSTALLATION

- .1 Switches:
 - .1 Install single throw switches with handle in "UP" position when switch closed.
 - .2 Install switches in gang type outlet box when more than one switch is required in one location.
 - .3 Mount toggle switches at height in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Receptacles:
 - .1 Install receptacles in gang type outlet box when more than one receptacle is required in one location.
 - .2 Mount receptacles at height in accordance with Section 26 05 00 - Common Work Results for Electrical.
 - .3 Where split receptacle has one portion switched, mount vertically and switch upper portion.
 - .4 Install GFI type receptacles in wet areas.
- .3 Cover plates:
 - .1 Install suitable common cover plates where wiring devices are grouped.
 - .2 Do not use cover plates meant for flush outlet boxes on surface-mounted boxes.

3.03 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

3.04 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.
- .3 Repair damage to adjacent materials caused by wiring device installation.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Section 26 05 00 – Common Work Results for Electrical

I.02 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI):
 - .1 ANSI C82.1, Lamp Ballasts-Line Frequency Fluorescent Lamp Ballast
 - .2 ANSI C82.4, Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps Multi Supply Type
- .2 American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE):
 - .1 ANSI/IEEE C62.41.2, Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits
- .3 ASTM International (ASTM):
 - .1 ASTM F1137/F1137M-[19], Standard Specification for Phosphate/Oil and Phosphate/Organic Corrosion Protective Coatings for Fasteners
- .5 Interference-Causing Equipment Standard (ICES):
 - .1 ICES-005-18, Lighting Equipment
- .6 ULC Standards (ULC):
 - .1 UL 8753 , Field-Replaceable Light Emitting Diode (LED) Light Engines
 - .2 UL 2388, Flexible Lighting Products

I.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Provide complete photometric data prepared by independent testing laboratory for luminaires where specified, for approval by HWDSB and JASON FUNG ARCHITECT INC..
 - .3 Photometric data to include: VCP Table where applicable.
- .4 Quality Assurance Submittals: Provide in accordance with Section 01 43 00 - Quality Assurance.
 - .1 Manufacturer's Instructions: Submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.

I.04 QUALITY ASSURANCE

- .1 Not used.

I.05 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

- .3 Divert unused metal materials from landfill to metal recycling facility.
- .4 Disposal and recycling of fluorescent lamps as per local regulations.

2 PRODUCTS

2.01 LAMPS

- .1 Light Emitting Diode (LED): CGTS NUV projected lumen maintenance based on TM21 testing standards is >L82 @60,000 hours, Driver rated for FCC part 15 Class B for use in residential or commercial applications, LEDs are 85 CRI (minimum) and switch to 3500K, 4000K, and 5000K.

2.02 BALLASTS

- .1 Not Used.

2.03 FINISHES

- .1 Light fixture finish and construction to meet ULC listing and CSA certification related to intended installation.
- .2 Refer to manufactures specification sheet:
 - .1 Metalux CGTS NUV, 1x4, 120-347V Driver, or approved equivalent.
- .3 Refer to RFT Document for substitutions.

2.04 OPTICAL CONTROL DEVICES

- .1 As indicated in luminaire schedule.

2.05 LUMINAIRES

- .1 As indicated in luminaire schedule.

3 EXECUTION

3.01 INSTALLATION

- .1 Locate and install luminaires as indicated.
- .2 Provide adequate support to suit ceiling system.

3.02 WIRING

- .1 Connect luminaires to lighting circuits:
 - .1 Install flexible or rigid conduit for luminaires as indicated.

3.03 LUMINAIRE SUPPORTS

- .1 For suspended ceiling installations support luminaires from ceiling grid in accordance with local inspection requirements.

3.04 LUMINAIRE ALIGNMENT

- .1 Align luminaires mounted in continuous rows to form straight uninterrupted line.
- .2 Align luminaires mounted individually parallel or perpendicular to building grid lines.

3.05 CLEANING

- .1 Clean in accordance with Section 01 74 00 - Cleaning.

END OF SECTION

I GENERAL

I.01 RELATED REQUIREMENTS

- .1 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings

I.02 REFERENCE STANDARDS

- .1 CSA Group (CSA):
 - .1 CSA C22.2 No.141-15, Emergency Lighting Equipment

I.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for emergency lighting and include product characteristics, performance criteria, physical size, finish and limitations.

I.04 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for emergency lighting for incorporation into manual.

I.05 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, and handle materials in accordance with Section Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors and in accordance with manufacturer's recommendations in a clean, dry, well-ventilated area.
 - .2 Store and protect emergency lighting from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

I.06 WARRANTY

- .1 For batteries in this Section 26 52 13.13 - Emergency Lighting, 12 months warranty period is extended to 120 months.

2 PRODUCTS

2.01 EQUIPMENT

- .1 Emergency lighting equipment: to CSA C22.2 No.141

- .2 Supply voltage: 12 V.
- .3 Operating time: 120 minutes.
- .4 Battery: sealed, maintenance free.
- .5 Charger: shall provide a continuous high charge to recharge the battery, when the battery is at full capacity, the charger will shut-off. Periodically the charger shall provide a pulse of energy to keep the battery topped off. The charger shall be current limited, temperature compensated, short-circuit proof and reverse polarity protected.
- .7 Solid state transfer circuit.
- .8 Low voltage disconnect: solid state, modular, operates at 80% battery output voltage.
- .11 Signal lights: solid state, for 'AC Power ON' and 'High Charge'.
- .12 Lamp heads: The unit shall come complete with fully adjustable 12V or 24V/12 WW or 20 W quartz halogen lamps. . Each lamp shall be housed in an impact-resistant polycarbonate cube.
- .13 Cabinet: suitable for direct or shelf mounting to wall and c/w knockouts for conduit. Removable or hinged front panel for easy access to batteries.
- .14 Finish: Factory White. Cube lens to be frosted.
- .15 Refer to Lumacell specification sheet and installation requirements.
- .15 Auxiliary equipment:
 - .1 Dust-tight relay.
 - .2 Voltmeter.
 - .3 Test switch.
 - .4 Time delay relay.
 - .5 Battery disconnect device.

2.02 WIRING OF REMOTE HEADS

- .1 Conduit in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
- .2 Conductors as indicated in accordance with manufacturer's recommendations.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for emergency lighting installation in accordance with manufacturer's instructions.
 - .1 Visually inspect substrate.
 - .2 Inform HWDSB and JASON FUNG ARCHITECT INC. of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from JASON FUNG ARCHITECT INC..

3.02 INSTALLATION

- .1 Install unit equipment and remote mounted fixtures.
- .2 Direct heads.
- .3 Connect exit lights to unit equipment.

3.03 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

3.04 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by emergency lighting installation.

END OF SECTION

I GENERAL

I.01 SUMMARY

- .1 This section includes exit signs units with battery back-ups or remote fixture mounting for ordinary location use.

I.01 RELATED REQUIREMENTS

- .1 Not used.

I.02 REFERENCES

- .1 Underwriters Laboratories, Inc. (UL):
 - .1 UL924, Standard for Safety of Emergency Lighting and Power Equipment
- .2 National Fire Prevention Association (NFPA):
 - .1 NFPA 101, Life Safety Code
- .3 National Fire Protection Association (NFPA):
 - .1 NFPA 70, National Electrical Code (NEC)
- .4 Canadian Standards Association (CAS):
 - 1. CSA C22.2 No.141, Unit Equipment for Emergency Lighting
 - 2. CSA C860, Performance of Internally Lighted Exit signs
 - 3. CSA C22.1, Canadian Electrical Code Part I (CEC)

I.03 SUBMITTALS

- .1 Comply with Section 01 33 00 – Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's descriptive literature and product specifications for each product.
 - .2 Manufacturer's product drawings.
- .3. Manufacturer's installation instructions

I.04 QUALITY ASSURANCE

- .1 Manufacturer Qualifications: Products shall be free of defects in material and workmanship.
- .2 Furnished products are listed and/or certified by third party agencies as suitable for the intended purpose.
- .3 All units will be certified that they have been tested prior to shipping.

I.05 WARRANTY

- .1 Product is warranted free of defects in material and workmanship.
- .2 Product is warranted to perform the intended function within design limits.

2 PRODUCTS

2.01 GENERAL

- .1 Exit signs units shall be UL Listed and/or CSA Certified to
 - .1 C22.2 No 141 and C860 for Canada
- .2 Exit signs units shall perform self-testing in accordance with NFPA 101 if provided. This shall not be regulated in Canada.

2.02 MANUFACTURERS

- .1 Not Used.

2.03 DESIGN AND PERFORMANCE REQUIREMENTS

- .1 LA Series Extruded Aluminum Pictogram Exit Sign:
 - .1 Equipment shall operate with universal 2-wire AC input voltage of 120 to 347VAC at less than 2.5W and universal 2-wire DC input voltage from 6 to 24VDC at less than 1.5W for single and double face signs.
 - .2 The equipment shall be suitable for wall, end, or ceiling mount. The housing shall be constructed of rugged extruded aluminum and have a maximum depth of 2-1/2".
 - .3 The faceplate(s) shall be constructed of extruded Aluminum and shall incorporate a protective clear poly-carbonate panel.
 - .4 Each face plate shall come standard with two legend films for pictogram and direction selection. The light source shall be white light-emitting diodes (LED) and shall provide even illumination in normal and emergency operation.
 - .5 The pictogram Exit Sign in a Self-Powered configuration shall use a sealed Nickel-Cadmium battery of 2.4V nominal voltage and shall stay illuminated during emergency operation for at least 120 minutes upon AC failure.
 - .6 The pictogram Exit Sign shall be CSA 22.2 No. 141-15 certified.

3 EXECUTION

- .1 Not used.

3.01 INSTALLATION

- .1 Installation shall be in accordance to the NEC, CEC and manufacturer's instructions.

END OF SECTION



February 13, 2026

Hamilton-Wentworth District School Board
20 Education Court
Hamilton, ON

Re: Hazardous Building Materials Assessment (Preconstruction)
Corridor Ceiling Replacement Project
R. A. Riddell Public School, 200 Cranbrook Drive, Hamilton, ON
Pinchin File: 352293.016

Hamilton-Wentworth District School Board (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at R. A. Riddell Public School, located at 200 Cranbrook Drive, Hamilton, ON.

Pinchin performed the assessment on January 19, 2026. The assessor was unaccompanied during the assessment. The assessed area was occupied at the time of the assessment.

The objective of the assessment was to identify specified hazardous building materials in preparation for building renovation activities. The proposed work as identified by the Client includes ceiling replacement in the corridors.

The results of this assessment are intended for use with a properly developed scope of work or performance specification.

The **assessed area** is limited to the portion(s) of the building to be renovated, as described by the Client, and identified in the drawings in Appendix I.

1.0 SUMMARY OF FINDINGS

- Asbestos:
 - Plaster
 - Drywall joint compound
 - Transite rainwater leaders
 - Vinyl floor tiles and mastic (presumed)
- Lead-containing paints and coatings are present.
- Solid lead is present in batteries of emergency lights.

- Crystalline silica is present in concrete and other materials such as masonry, concrete, mortar, and plaster.
- Mercury vapour is present in lamp tubes.
- PCB-containing materials were not identified.
- Water staining was observed on acoustic ceiling tiles.

2.0 RECOMMENDATIONS

2.1 General

Prepare scope of work or performance specifications for hazardous material removal required for the planned work. The specifications should include safe work practices, personal protective equipment, respiratory protection, and disposal of waste materials.

If suspected hazardous building materials are discovered during the planned work, which are not identified in this report, do not disturb, and arrange for further testing and evaluation.

Conduct further investigation of the following items, areas, or locations, which were not completed during this assessment:

- Any items listed as exclusions prior to disturbance

Provide this report and the detailed plans and specifications to the contractor prior to bidding or commencing work.

Retain a qualified consultant to specify, observe and document the successful removal of hazardous materials.

Update the asbestos inventory upon completion of the abatement and removal of asbestos-containing materials and any other relevant findings.

2.2 Remedial Work

Remedial work is not required.

2.3 Project Work

The following recommendations are made regarding renovation involving the hazardous materials identified.

2.3.1 Asbestos

Remove asbestos-containing materials (ACM) prior to renovation, alteration, or maintenance if ACM may be disturbed by the work.



If the identified ACM will not be removed prior to commencement of the work, any potential disturbance of ACM must follow asbestos precautions appropriate for the type of work being performed.

Asbestos-containing materials must be disposed of at a landfill approved to accept asbestos waste.

2.3.2 Lead

For lead-containing (i.e., greater than the EACC guideline of 0.1% (1,000 mg/kg), construction disturbance may result in over-exposure to lead dust or fumes. The need for work procedures, engineering controls and personal protective equipment should be assessed on a site-specific basis to comply with Ministry of Labour, Training and Skills Development regulations and guidelines.

Exposure from construction disturbance of paints containing lead less than 0.009% (90 mg/kg) is assumed to be insignificant.

Lead-containing items should be recycled when taken out of service.

2.3.3 Silica

Construction disturbance of silica-containing products may result in excessive exposures to airborne silica, especially if performed indoors and dry. Cutting, grinding, drilling or demolition of materials containing silica should be completed only with proper respiratory protection and other worker safety precautions that comply with applicable regulations and guidelines.

2.3.4 Mercury

Do not break lamps. Recycle and reclaim mercury from fluorescent lamps when taken out of service. Mercury is classified as a hazardous waste and must be disposed of in accordance with applicable regulations.

3.0 BACKGROUND INFORMATION

3.1 Assessed Area Description Summary

Description Item	Details
Building Use	Elementary school
Year of Construction	1972
Additions	1978, 1988, 1990, 2015
Structure	Structural steel, concrete block
Roof	Not assessed
Flooring	Vinyl floor tiles
Wall and Ceiling Finishes	Drywall, concrete block, acoustic ceiling tiles, plaster



3.2 Existing Reports

3.2.1 Review of Previous Reports

Pinchin reviewed the following reports:

- “R.A. Riddell School Asbestos Inventory”, January 2025, prepared by HWDSB.

4.0 FINDINGS

Any quantities listed in this report or data tables are estimated based on visual approximations only and are subject to variation.

Photos of selected hazardous building materials are shown in the Photograph Report in Appendix VII.

4.1 Asbestos

The following table summarizes the materials evaluated for asbestos in the assessed area. For details on approximate quantities, condition, friability, accessibility, and locations of hazardous building materials; refer to the Hazardous Material Summary / Sample Log and All Data Report in Appendices V and VI.

Sample Number	Material Description	Type of Asbestos	Hazard	Quantity Present	Material Specific Notes
S0001 ABC	Ceiling Ceiling Tiles (lay-in) 24x48 pinhole with width-wise fissure (Armstrong Fire Guard)	None Detected	No		
S0003 ABCDEFG	Wall Paint (1972)	<0.5% Chrysotile	No		
S0004 ABC	Wall Plaster, firestopping application, above ceiling	None Detected	No		
S0005 ABCDE	Wall Paint (1978)	None Detected	No		
S0006 ABC	Duct Mastic, Grey	None Detected	No		
S0007 ABC	Ceiling Plaster entrance to corridor 125 (Location 9075), former exterior soffit	Chrysotile (white finish layer)	Yes	25 SF	
S0008 ABC	Ceiling Debris Tar from roofing on surface of ceiling tiles	None Detected	No		
V9000	Ceiling Drywall and joint compound	Confirmed Asbestos	Yes	300 SF	
V9000	Ceiling Plaster and Overspray Textured	Confirmed Asbestos	Yes	120 SF	1



Sample Number	Material Description	Type of Asbestos	Hazard	Quantity Present	Material Specific Notes
V9000	Piping Cement Product	Confirmed Asbestos	Yes	120 LF	
V9500	Floor Vinyl Floor Tile and Mastic, various colours and patterns	Presumed Asbestos	Yes	8635 SF	
V0000	Ceiling Acoustic Tile Ceiling Tiles (lay-in), 24" x 48" various patterns	None	No		
V0000	Ceiling Drywall and joint compound bulkhead and ceiling (2009 date stamp)	None	No		
V0000	Floor Vinyl Floor Tile and Mastic 12x12 brown and white mottled (2015)	None	No		
V0000	Wall Drywall and joint compound 2015	None	No		
V0000	Wall Paint (1988 and 2015)	None	No		

Material Specific Notes:

1. Overspray from the textured plaster ceiling may be present within concealed areas, including but not limited to cavities, shafts, walls, behind finishes, structural components, ducts, pipes, electrical equipment, etc.

General Notes:

Materials identified as Sample Number V9500 were either observed to be present or based on the construction of the building/equipment are likely present in concealed locations. These materials have not been sampled and are presumed to contain asbestos based on historical known use of asbestos.

Sampling of these materials may be completed prior to disturbance.

Materials identified as Sample Number V9000 were observed to be present and were determined to contain asbestos based on previous analytical results, or labelling (e.g., Transite clearly labelled by the manufacturer).

Materials identified as Sample Number V0000 were determined to be non-asbestos based on the manufacture date and known end of use of asbestos in these products.

4.1.1 Excluded Asbestos Materials

The following is a list of materials which may contain asbestos and were excluded from the assessment. These materials are presumed to contain asbestos until otherwise proven to be non-asbestos by sampling and analysis:

- Roofing felts and tar, mastics
- Floor levelling compound
- Electrical components
- Mechanical packing, ropes, and gaskets
- Vermiculite
- Adhesives and duct mastics not sampled
- Caulking and putties not sampled
- Fire resistant doors
- Ropes and gaskets in cast-iron bell and spigot joints
- Sealants on pipe threads

4.2 Lead

Refer to the Hazardous Material Summary / Sample Log and All Data Report in Appendices V and VI for details on locations, condition and approximate quantities on paints sampled and their locations.

The following table summarizes the analytical results of paints sampled.

Sample Number	Material Description	Concentration	Hazard
L0001	Wall Concrete Block Yellow	0.00065%	No
L0002	Wall Concrete Block white	0.0051%	No
L0003	Wall Masonry white	0.0012%	No
L0004	Wall Concrete Block white	0.00018%	No
L0005	Wall Concrete Block grey	0.00043%	No
V9500	Structure Steel red	Presumed >0.1%	Yes

Results above 0.1% (1,000 mg/kg) are considered lead-containing.

Paints containing lead less than 0.009% (90 mg/kg) are assumed to be insignificant relating to potential exposure from construction disturbance.

4.2.1 Lead Products and Applications

Refer to the Hazardous Material Summary / Sample Log and All Data Report in Appendices V and VI for details on lead-products including their locations and quantities.

Sample Number	Material Description	Hazard	Total Quantity Present
V9500	Batteries In Emer. Lights	Yes	4EA

General Notes:

Items identified as Sample Number V9500 were observed to be present but could not be definitively determined to contain lead (e.g., inaccessible batteries).

4.2.2 Excluded Lead Materials

Lead may be present in a number of materials which were not assessed and/or sampled. The following materials, where found, should be considered to contain lead.

- Electrical components, including wiring connectors, grounding conductors, and solder
- Solder on pipe connections

4.3 Silica

Crystalline silica is a presumed component of the following materials:

- Poured and pre-cast concrete
- Masonry and mortar
- Plaster

4.4 Mercury

Refer to the Hazardous Material Summary / Sample Log and All Data Report in Appendices V and VI for details on mercury-containing products including their locations and quantities.

Sample Number	Material Description	Confirmed Hazard
V9000	Light Fixture	Yes
V0000	Light Fixture	No
V0000	Thermostat	No

General Notes:

Items identified as Sample Number V9000 were observed to be present and were determined to contain mercury based on visual observation (e.g., labelled lamps and ampules in thermostats).

Items identified as Sample Number V0000 are items that historically may have contained mercury; however, have been visually identified as non-mercury types (e.g., LED lamps, digital or electric thermostats).

4.5 Polychlorinated Biphenyls

PCB products were not found during the assessment.

4.5.1 Excluded PCB Materials

PCBs are known to be present in several materials and equipment which were not assessed or sampled. The following materials, where found, should be presumed to contain PCBs until sampling proves otherwise.

- Capacitors within or associated with electrical equipment

4.6 Mould and Water Damage

The following water damage was identified:

Sample Number	Material Description	Location	Hazard	Total Quantity Present
V9500	Ceiling Tiles (lay-in)	9039,9077	Yes	7 SF

General Notes:

Materials identified as Sample Number V9500 were noted as having visible water damage; however, no visible indications of suspect mould growth.

5.0 METHODOLOGY

For the purpose of the assessment and this report, hazardous building materials are defined as follows:

- Asbestos
- Lead
- Silica
- Mercury
- Polychlorinated Biphenyls (PCBs)
- Mould and Water Damage



Arsenic, acrylonitrile, benzene, coke oven emissions, ethylene oxide, isocyanates and vinyl chloride monomer are not typically found in building materials in a composition/state that is hazardous and were not included in this assessment.

Pinchin conducted a room-by-room assessment to identify the hazardous building materials as defined in the scope.

The assessment was performed to establish the type of specified hazardous building materials, locations and approximate quantities incorporated in the structure(s) and its finishes.

Demolition of exterior building finishes, masonry walls (chases, shafts etc.), and structural surrounds was not conducted.

Sampling of roofing materials was not conducted.

For further details on the methodology including test methods and evaluation criteria, refer to Appendix III.

6.0 REFERENCES

The following legislation and documents were referenced in completing the assessment and this report:

1. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05.
2. Designated Substances, Ontario Regulation 490/09.
3. Lead on Construction Projects, Ministry of Labour Guidance Document.
4. The Environmental Abatement Council of Canada (EACC) Lead Guideline for Construction, Renovation, Maintenance or Repair.
5. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended.
6. Silica on Construction Projects, Ministry of Labour Guidance Document.
7. Alert – Mould in Workplace Buildings, Ontario Ministry of Labour.
8. PCB Regulations, SOR/2008-273, Canadian Environmental Protection Act.
9. Surface Coating Materials Regulations, SOR/2016-193, Canada Consumer Product Safety Act.
10. Consolidated Transportation of Dangerous Goods Regulations, including Amendment SOR/2019-101, Transportation of Dangerous Goods Act.

7.0 LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.



Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

8.0 CLOSURE

Contact the Project Manager, Jessica Cozzitorto at jcozzitorto@pinchin.com should you have any questions.

Sincerely,

Pinchin Ltd.

Prepared by:

A handwritten signature in blue ink, appearing to read "Emily Balfour".

Emily Balfour
Project Manager

Project Managed by:

A handwritten signature in blue ink, appearing to read "Jessica Cozzitorto".

Jessica Cozzitorto, C. Tech.
Team Leader

Reviewed by:

A handwritten signature in blue ink, appearing to read "Damian Palus".

Damian Palus, C.E.T.
Operations Manager



Encl:	APPENDIX I	Drawings
	APPENDIX II-A	Asbestos Analytical Certificates
	APPENDIX II-B	Lead Analytical Certificates
	APPENDIX III	Methodology
	APPENDIX IV	Location Summary Report
	APPENDIX V	Hazardous Materials Summary Report / Sample Log
	APPENDIX VI	All Data Report
	APPENDIX VII	Photographs

\\PIN-HAM-FS02\job\352000s\0352293.000 HAMILTON-WENT,Various2025Pr,HAZ,CONS\0352293.016
HWDSB,RARiddell,CorridorCeiling,HAZ,ASSMT\Deliverables\Report\352293.016 HBMA Report Corridor Ceilings RA Riddell HWDSB February 13 2026.docx
Template: Master Template HBMA PreConstruction, HMIS, HAZ, August 15, 2024

APPENDIX I
Drawings



LEGEND

PINCHIN/HWDSB LOCATION NUMBER

— SURVEY BOUNDARY/ASSESSED AREA

⊙ ASBESTOS BULK SAMPLE

▲ LEAD BULK SAMPLE

ASBESTOS-CONTAINING MATERIALS:

■ PLASTER CEILING

■ DRYWALL CEILING/BULKHEAD

⊞ TRANSITE

FOR CLARITY, THE FOLLOWING ASBESTOS-CONTAINING MATERIALS, ARE PRESENT IN THE ASSESSED AREA, BUT HAVE NOT BEEN HATCHED ON THE DRAWING:

- VINYL FLOOR TILES AND MASTIC (PRESUMED)

NOT ALL KNOWN OR SUSPECTED HAZARDOUS BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED HAZARDOUS BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



PROJECT NAME:
**HAZARDOUS MATERIALS
BUILDING ASSESSMENT**

CLIENT NAME:
**HAMILTON-WENTWORTH
DISTRICT SCHOOL BOARD**

PROJECT LOCATION:
**R.A. RIDDELL SCHOOL
200 CRANBROOK DRIVE,
HAMILTON, ONTARIO**

FIGURE NAME:
FIRST FLOOR PLAN

PROJECT NUMBER:
0352293.016

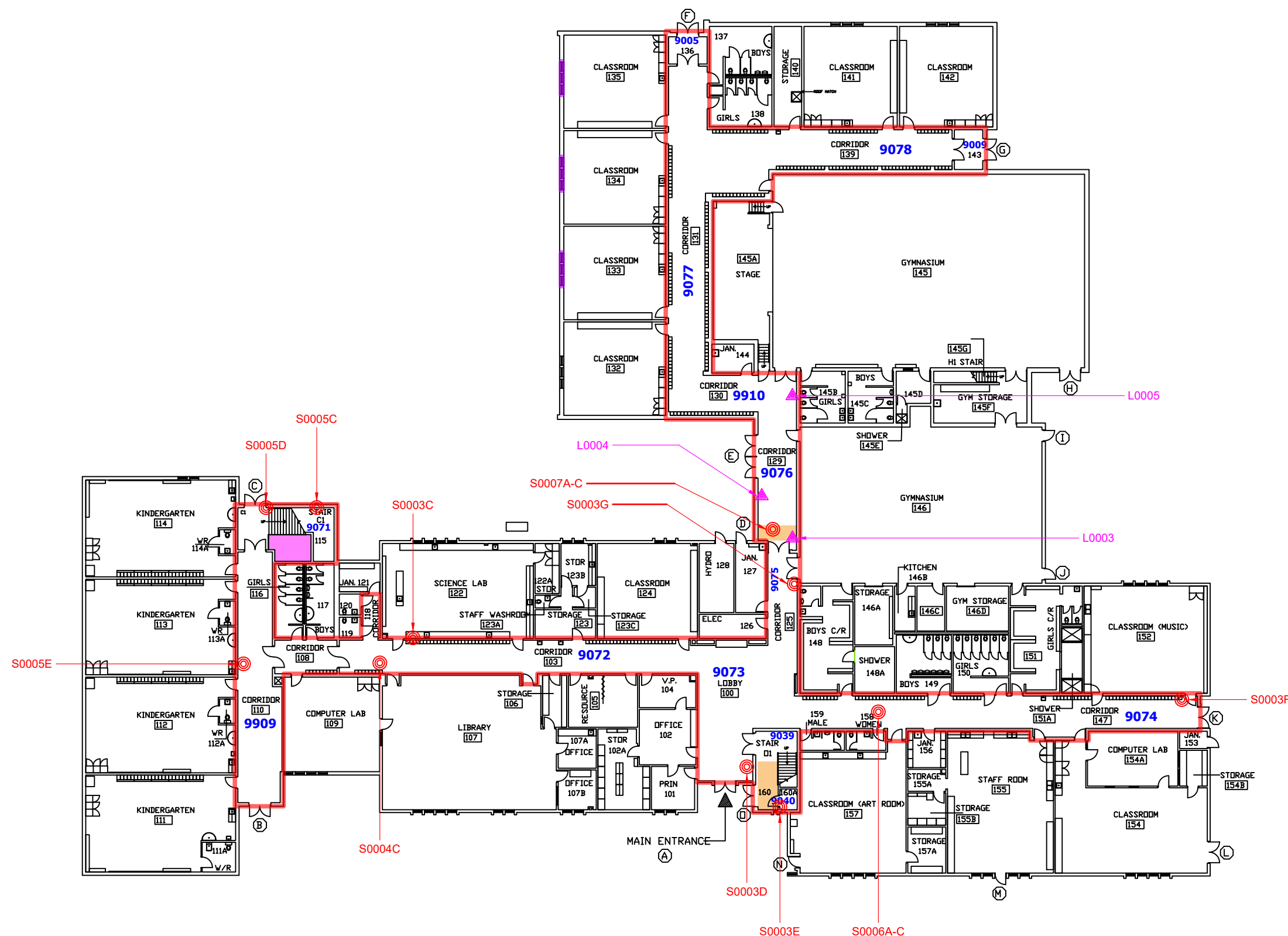
SCALE:
NOT TO SCALE

DRAWN BY:
ML

REVIEWED BY:
EB

DATE:
FEBRUARY 2026

FIGURE NUMBER:
1 OF 2



APPENDIX II-A
Asbestos Analytical Certificates



Your Project #: 352293.016
Site Location: RA RIDDELL
Your C.O.C. #: N/A

Attention: Emily Balfour

Pinchin Ltd
151 York Boulevard
Suite 200
Hamilton, ON
CANADA L8R 3M2

Report Date: 2026/01/29
Report #: R8687961
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C607457

Received: 2026/01/23, 14:20

Sample Matrix: Bulk
Samples Received: 24

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Asbestos by PLM - 0.5 RDL (1)	24	N/A	2026/01/29	COR3SOP-00002	EPA 600R-93/116

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Bureau Veritas' Asbestos Laboratory is accredited by NVLAP for bulk asbestos analysis by polarized light microscopy, NVLAP Code 600136-0.

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Bureau Veritas' scope of accreditation includes EPA -- 40 CFR Appendix E to Subpart E of Part 763, "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" and EPA-600/R-93/116: "Method for the Determination of Asbestos in Bulk Building Materials".

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) P.O.B. - Percent of Bulk

When Asbestos data is reported with other data, this report contains data that are not covered by the NVLAP accreditation.



Your Project #: 352293.016
Site Location: RA RIDDELL
Your C.O.C. #: N/A

Attention: Emily Balfour

Pinchin Ltd
151 York Boulevard
Suite 200
Hamilton, ON
CANADA L8R 3M2

Report Date: 2026/01/29
Report #: R8687961
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C607457

Received: 2026/01/23, 14:20

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Elora Di Bratto, Project Manager
Email: Elora.Di-Bratto@bureauveritas.com
Phone# (905) 817-5700

=====

This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0001A CEILING, ACOUSTIC TILE, CEILING TILES (LAY-IN), 24X48 PINHOLE WITH WIDTH-WISE FISSURE (ARMSTONG FIRE GUARD), LOC:9039, STAIRS

Bureau Veritas
ID: AZHC29

Date Analyzed: 2026/01/29

	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>		<u>Particulate</u>
Layer 1	100	Homogeneous grey ceiling tile	Not Detected	Cellulose	35%	Non-Fibrous
				Fibrous Glass	45%	

S0001B CEILING, ACOUSTIC TILE, CEILING TILES (LAY-IN), 24X48 PINHOLE WITH WIDTH-WISE FISSURE (ARMSTONG FIRE GUARD), LOC:9912, CORRIDOR

Bureau Veritas
ID: AZHC30

Date Analyzed: 2026/01/29

	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>		<u>Particulate</u>
Layer 1	100	Homogeneous grey ceiling tile	Not Detected	Cellulose	35%	Non-Fibrous
				Fibrous Glass	45%	

S0001C CEILING, ACOUSTIC TILE, CEILING TILES (LAY-IN), 24X48 PINHOLE WITH WIDTH-WISE FISSURE (ARMSTONG FIRE GUARD), LOC:9072, CORRIDOR

Bureau Veritas
ID: AZHC31

Date Analyzed: 2026/01/29

	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>		<u>Particulate</u>
Layer 1	100	Homogeneous grey ceiling tile	Not Detected	Cellulose	35%	Non-Fibrous
				Fibrous Glass	45%	

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0003A WALL,PAINT,LOC:9039,STAIRS					
Bureau Veritas ID: AZHC32		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Chrysotile <0.50%		Non-Fibrous

S0003B WALL,PAINT,LOC:9098,CORRIDOR					
Bureau Veritas ID: AZHC33		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

S0003C WALL,PAINT,LOC:9072,CORRIDOR					
Bureau Veritas ID: AZHC34		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, “<0.50%”. “Not Detected” indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0003D WALL,PAINT,LOC:9073,LOBBY					
Bureau Veritas ID: AZHC35		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

S0003E WALL,PAINT,LOC:9039,STAIRS					
Bureau Veritas ID: AZHC36		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Chrysotile <0.50%		Non-Fibrous

S0003F WALL,PAINT,LOC:9074,CORRIDOR					
Bureau Veritas ID: AZHC37		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0003G WALL,PAINT,LOC:9075,CORRIDOR					
Bureau Veritas ID: AZHC38		Date Analyzed: 2026/01/29			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

S0004A WALL,FIRE STOP,PLASTER,LOC:9039,STAIRS					
Bureau Veritas ID: AZHC39		Date Analyzed: 2026/01/29			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey plaster	Not Detected		Non-Fibrous

S0004B WALL,FIRE STOP,PLASTER,LOC:9098,CORRIDOR					
Bureau Veritas ID: AZHC40		Date Analyzed: 2026/01/29			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey plaster	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0004C WALL,FIRE STOP,PLASTER,LOC:9072,CORRIDOR					
Bureau Veritas ID: AZHC41		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey plaster	Not Detected		Non-Fibrous

S0005A WALL,PAINT,LOC:9912,CORRIDOR					
Bureau Veritas ID: AZHC42		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

S0005B WALL,PAINT,LOC:9071,STAIRS					
Bureau Veritas ID: AZHC43		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, “<0.50%”. “Not Detected” indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0005C WALL,PAINT,LOC:9071,STAIRS					
Bureau Veritas ID: AZHC44		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

S0005D WALL,PAINT,VESTIBULE,LOC:9071,STAIRS					
Bureau Veritas ID: AZHC45		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

S0005E WALL,PAINT,LOC:9909,CORRIDOR					
Bureau Veritas ID: AZHC46		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous off-white/grey paint/cementitious material	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0006A DUCT,MASTIC, GREY,LOC:9074,CORRIDOR					
Bureau Veritas ID: AZHC47		Date Analyzed: 2026/01/29			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey mastic	Not Detected		Non-Fibrous

S0006B DUCT,MASTIC, GREY,LOC:9074,CORRIDOR					
Bureau Veritas ID: AZHC48		Date Analyzed: 2026/01/29			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey mastic	Not Detected		Non-Fibrous

S0006C DUCT,MASTIC, GREY,LOC:9074,CORRIDOR					
Bureau Veritas ID: AZHC49		Date Analyzed: 2026/01/29			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey mastic	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, “<0.50%”. “Not Detected” indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0007A CEILING,SOFFIT,PLASTER,ENTRANCE TO CORRIDOR 129 (9076),LOC:9075,CORRIDOR					
Bureau Veritas ID:		AZHC50		Date Analyzed: 2026/01/29	
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	10	Homogeneous white plaster	Chrysotile 1%		Non-Fibrous
Layer 2	90	Homogeneous grey plaster	Not Detected		Non-Fibrous

S0007B CEILING,SOFFIT,PLASTER,ENTRANCE TO CORRIDOR 129 (9076),LOC:9075,CORRIDOR					
Bureau Veritas ID:		AZHC51		Date Analyzed: 2026/01/29	
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	60	Homogeneous white plaster	N/A		
	Comment: Not Analyzed - Positive Stop				
Layer 2	40	Homogeneous grey plaster	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, “<0.50%”. “Not Detected” indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



Bureau Veritas Job #: C607457
Report Date: 2026/01/29

Pinchin Ltd
Client Project #: 352293.016
Site Location: RA RIDDELL
Sampler Initials: EB

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

S0007C CEILING,SOFFIT,PLASTER,ENTRANCE TO CORRIDOR 129 (9076),LOC:9075,CORRIDOR					
Bureau Veritas ID: AZHC52		Date Analyzed: 2026/01/29			
	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	90	Homogeneous white plaster	N/A		
	Comment: Not Analyzed - Positive Stop				
Layer 2	10	Homogeneous grey plaster	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, “<0.50%”. “Not Detected” indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd



**BUREAU
VERITAS**

Bureau Veritas Job #: C607457

Report Date: 2026/01/29

Pinchin Ltd

Client Project #: 352293.016

Site Location: RA RIDDELL

Sampler Initials: EB

GENERAL COMMENTS

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C607457

Report Date: 2026/01/29

Pinchin Ltd

Client Project #: 352293.016

Site Location: RA RIDDELL

Sampler Initials: EB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Dina Yousif, Analyst 2

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

C607457

2026/01/23 14:20

Pinchin Ltd. - Asbestos Laboratory
Internal Asbestos Bulk Sample Chain of Custody



NONT-2026-01-3262

Special Instructions:

Client Name:		Project Address:	ON
Portfolio/Building No:	RA Riddell	Pinchin File:	352293.016
Submitted by:	Emily Balfour	Email:	ebalfour@pinchin.com
CC Email:	Jessica Cozzitorto	CC Email:	jcozzitorto@pinchin.com
Date Submitted:	January 22 2026	Required by:	January 29 2026
# of Samples:	24	Priority:	5 Day Turnaround
Year of Building Construction (Mandatory, Years ONLY):			
Do NOT Stop on Positive (Sample Numbers):			
Pinchin Group Company (Mandatory Field): Pinchin			
HMIS2 Building Reference #: 159520/202601989619139			

To be Completed by Lab Personnel Only:

Lab Reference #:	Time: 14:20	24 hour clock		
Received by:	Date: 2026/01/23	Month	Day	Year
Name(s) of Analyst(s):	JAN 23 2026 <i>Ar. Set</i> <i>Susan Samson</i>			

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0001	A	Ceiling,Acoustic Tile,Ceiling Tiles (lay-in),24x48 Pinhole With Width-wise Fissure (armstong Fire Guard),Loc:9039,Stairs
S	0001	B	Ceiling,Acoustic Tile,Ceiling Tiles (lay-in),24x48 Pinhole With Width-wise Fissure (armstong Fire Guard),Loc:9912,Corridor
S	0001	C	Ceiling,Acoustic Tile,Ceiling Tiles (lay-in),24x48 Pinhole With Width-wise Fissure (armstong Fire Guard),Loc:9072,Corridor
S	0003	A	Wall,Paint,Loc:9039,Stairs
S	0003	B	Wall,Paint,Loc:9098,Corridor
S	0003	C	Wall,Paint,Loc:9072,Corridor
S	0003	D	Wall,Paint,Loc:9073,Lobby

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0003	E	Wall,Paint,Loc:9039,Stairs
S	0003	F	Wall,Paint,Loc:9074,Corridor
S	0003	G	Wall,Paint,Loc:9075,Corridor
S	0004	A	Wall,Fire Stop,Plaster,Loc:9039,Stairs
S	0004	B	Wall,Fire Stop,Plaster,Loc:9098,Corridor
S	0004	C	Wall,Fire Stop,Plaster,Loc:9072,Corridor
S	0005	A	Wall,Paint,Loc:9912,Corridor
S	0005	B	Wall,Paint,Loc:9071,Stairs
S	0005	C	Wall,Paint,Loc:9071,Stairs
S	0005	D	Wall,Paint,Vestibule,Loc:9071,Stairs
S	0005	E	Wall,Paint,Loc:9909,Corridor
S	0006	A	Duct,Mastic, Grey,Loc:9074,Corridor
S	0006	B	Duct,Mastic, Grey,Loc:9074,Corridor
S	0006	C	Duct,Mastic, Grey,Loc:9074,Corridor
S	0007	A	Ceiling,Soffit,Plaster,Entrance To Corridor 129 (9076),Loc:9075,Corridor
S	0007	B	Ceiling,Soffit,Plaster,Entrance To Corridor 129 (9076),Loc:9075,Corridor
S	0007	C	Ceiling,Soffit,Plaster,Entrance To Corridor 129 (9076),Loc:9075,Corridor



Pinchin Ltd. Asbestos Laboratory *Certificate of Analysis*

Project No.: 0352293.016
Prepared For: E. Balfour

Lab Reference No.: b356862
Analyst(s): D. Yan

Date Received:	February 11, 2026	Samples Submitted:	1
Date Analyzed:	February 11, 2026	Phases Analyzed:	1

The Pinchin Ltd. Mississauga asbestos laboratory is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP Lab Code 101270-0) for the 'EPA – 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples,' and the 'EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials'; and meets all requirements of ISO/IEC 17025:2017. The Pinchin asbestos laboratory uses the aforementioned methods of analysis for all bulk materials. Please be advised that bulk materials do not include debris, dust, and tape-lift samples, and the analysis and reporting of these materials does not conform with Pinchin Ltd.'s NVLAP accreditation.

Bulk samples are checked visually and scanned under a stereomicroscope. Slides are prepared and observed under a Polarized Light Microscope (PLM) at magnifications of 40X, 100X or 400X as appropriate. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the percentage of asbestos present. A reported concentration of less than (<) the regulatory threshold indicates the presence of confirmed asbestos in trace quantities, limited to only a few fibres or fibre bundles in an entire sample. This method complies with provincial regulatory requirements where applicable. Multiple phases within a sample are analyzed and reported separately.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three months. Samples may be retrieved, upon request, for re-examination at any time during that period.

This report relates only to the items tested.

This report relates only to the items tested and is valid only when signed with a protected, authorized, electronic signature. This report may not be reproduced, except in full, without the written approval of Pinchin Ltd. The client may not use this report to claim product endorsement by NVLAP or any agency of the U.S. Government. Internal verification studies, quality assurance / control data and laboratory documentation on measurement uncertainty are available upon request.



Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project No.: 0352293.016
Prepared For: E. Balfour

Lab Reference No.: b356862
Date Analyzed: February 11, 2026

BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
S0008A Ceiling, Debris, Tar, Loc: 9039 , Stairs	Non-homogeneous, multicoloured, debris material.	None Detected	Cellulose 10-25% Man-Made Vitreous 10-25% Fibres Foam 0.5-5% Tar and other Non- Fibrous Material 50-75%
Comments:	This sample is large in size. A representative portion was taken and analyzed.		

Reviewed by:

Reporting Analyst:

Analyzed by: DY Feb 11, 2026
 Reviewed by: HB
 Report Sent by: [Signature]

Pinchin Ltd. - Asbestos Laboratory
Internal Asbestos Bulk Sample Chain of Custody

Special Instructions:

Client Name:		Project Address:	ON
Portfolio/Building No:	RA Riddell	Pinchin File:	352293.016
Submitted by:	Emily Balfour	Email:	ebalfour@pinchin.com
CC Email:	Jessica Cozzitorto	CC Email:	jcozzitorto@pinchin.com
Date Submitted:	February 10 2026	Required by:	February 12 2026
# of Samples:	1	Priority:	Rush Turnaround
Year of Building Construction (Mandatory, Years ONLY):			
Do NOT Stop on Positive (Sample Numbers):			
Pinchin Group Company (Mandatory Field):		Pinchin	
HMIS2 Building Reference #:		159820/20260123052240947586	
To be Completed by Lab Personnel Only:			
Lab Reference #:	0356862	Time:	24 hour clock
Received by:		Date:	Month Day Year
Name(s) of Analyst(s):	FEB 11 2026 <u>an</u> <u>D. Yan</u>		
Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0008	A	Ceiling, Debris, Tar, Loc: 9039, Stairs <u>ND</u>

APPENDIX II-B
Lead Analytical Certificates



Your Project #: 352293.016
Your C.O.C. #: N/A

Attention: Jessica Cozzitorto

Pinchin Ltd
151 York Boulevard
Suite 200
Hamilton, ON
CANADA L8R 3M2

Report Date: 2026/01/29
Report #: R8688131
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C607442

Received: 2026/01/23, 14:20

Sample Matrix: Bulk
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Metals in Paint	5	2026/01/29	2026/01/29	CAM SOP-00408	EPA 6010D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: 352293.016
Your C.O.C. #: N/A

Attention: Jessica Cozzitorto

Pinchin Ltd
151 York Boulevard
Suite 200
Hamilton, ON
CANADA L8R 3M2

Report Date: 2026/01/29
Report #: R8688131
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C607442

Received: 2026/01/23, 14:20

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Elora Di Bratto, Project Manager
Email: Elora.Di-Bratto@bureauveritas.com
Phone# (905) 817-5700

=====

This report has been generated and distributed using a secure automated process.

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ELEMENTS BY ATOMIC SPECTROSCOPY (BULK)

Bureau Veritas ID		AZHA71		AZHA72		AZHA73		
Sampling Date		2026/01/19 16:00		2026/01/19 16:00		2026/01/19 16:00		
COC Number		N/A		N/A		N/A		
	UNITS	L0001, WALL, CONCRTE BLOCK, Y ELLOW, LOC: 9039, STAI RS	RDL	L0002, WALL, CONCRET E BLOCK, WHITE, LOC: 9912, COR RIDOR	RDL	L0003, WALL, MASONRY, WHITE, LOC: 9076, CORRIDOR	RDL	QC Batch

Metals								
Lead (Pb)	%	0.00065	0.00022	0.0051	0.00042	0.0012	0.00029	A093872
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

Bureau Veritas ID		AZHA74		AZHA75		
Sampling Date		2026/01/19 16:00		2026/01/19 16:00		
COC Number		N/A		N/A		
	UNITS	L0004, WALL, CONCRETE BLOCK,, LOC: 9076, CORRIDOR	RDL	L0005, WALL, CONCRETE BLOCK, GREY, LOC: 9076, CORRIDOR	RDL	QC Batch

Metals						
Lead (Pb)	%	0.00018	0.00013	0.00043	0.00020	A093872
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



GENERAL COMMENTS

Sample AZHA71 [L0001,WALL,CONCRTE BLOCK,YELLOW,LOC:9039,STAIRS] : Metals Analysis: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Sample AZHA72 [L0002,WALL,CONCRETE BLOCK,WHITE,LOC:9912,CORRIDOR] : Metals Analysis: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Sample AZHA73 [L0003, WALL, MASONRY, WHITE, LOC: 9076, CORRIDOR] : Metals Analysis: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Sample AZHA74 [L0004, WALL, CONCRETE BLOCK,, LOC:9076, CORRIDOR] : Metals Analysis: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Sample AZHA75 [L0005, WALL, CONCRETE BLOCK, GREY, LOC: 9076, CORRIDOR] : Metals Analysis: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A093872	MEN	QC Standard	Lead (Pb)	2026/01/29		97	%	75 - 125
A093872	MEN	Method Blank	Lead (Pb)	2026/01/29	<0.00010		%	
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.								
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.								



BUREAU
VERITAS

Bureau Veritas Job #: C607442

Report Date: 2026/01/29

Pinchin Ltd

Client Project #: 352293.016

Sampler Initials: EB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

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NONT-2026-01-3254



6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/6

CHAIN OF CUSTODY RECORD

Page ____ of ____

Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required	
Company Name: Pinchin Ltd.		Company Name:		Quotation #:		☒ Regular TAT (5-7 days) Most analyses	
Contact Name: Emily Balfour / Jessica Cozzitorto		Contact Name:		P.O. #/ AFE#:		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
Address:		Address:		Project #:	352293.016	Rush TAT (Surcharges will be applied)	
				Site Location:		☐ 1 Day	☐ 2 Days ☐ 3-4 Days
Phone:	Fax:	Phone:	Fax:	Site #:		Date Required:	
Email: ebalfour@pinchin.com / jcozzitorto@pinchin.com		Email:		Site Location Province: ON		Rush Confirmation #:	
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY				Sampled By: Emily Balfour			
Regulation 153		Other Regulations		Analysis Requested		LABORATORY USE ONLY	
☐ Table 1 ☐ Res/Park ☐ Med/ Fine		☐ CCME ☐ Sanitary Sewer Bylaw				CUSTODY SEAL	
☐ Table 2 ☐ Ind/Comm ☐ Coarse		☐ MISA ☐ Storm Sewer Bylaw				Y / N	
☐ Table 3 ☐ Agri/ Other		☐ PWQO Region				Present	Intact
☐ Table _____		☐ Other (Specify)					
FOR RSC (PLEASE CIRCLE) Y / N		☐ REG 558 (MIN. 3 DAY TAT REQUIRED)					
Include Criteria on Certificate of Analysis: Y / N		☐ REG 406 Table				COOLING MEDIA PRESENT: Y / N	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS						COMMENTS	
SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI		
L0001, Wall, Concrete Block, Yellow, Loc:9039, Stairs	2026/01/19	16:00	BULK				
L0002, Wall, Concrete Block, White, Loc:9912, Corridor	2026/01/19	16:00	BULK				
L0003, Wall, Masonry, White, Loc:9076, Corridor	2026/01/19	16:00	BULK				
L0004, Wall, Concrete Block, , Loc:9076, Corridor	2026/01/19	16:00	BULK				
L0005, Wall, Concrete Block, Grey, Loc:9076, Corridor	2026/01/19	16:00	BULK				
RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	BV JOB #	
Emily Balfour	2026/01/22	14:00	<i>[Signature]</i>	2026/01/23	14:20		

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms available at <https://www.bvna.com/coc-terms-and-conditions>

APPENDIX III

Methodology



1.0 GENERAL

An investigation was conducted to identify the type of Hazardous Building Materials incorporated in the structure and its finishes.

Information regarding the location and condition of hazardous building materials encountered and visually estimated quantities were recorded. The locations of any samples collected were recorded on small-scale plans. As-built drawings and previous reports were referenced where provided.

Sample collection was conducted in accordance with our Standard Operating Procedures.

The following methodologies appropriate to each hazardous building material were applied where those materials were included in the scope of work.

1.1 Asbestos

The investigation for asbestos included friable and non-friable asbestos-containing materials (ACM). A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure, or a material that has already become crushed, pulverized, or powdered.

A separate set of samples was collected of each type of homogenous material suspected to contain asbestos. A homogenous material is defined by the US EPA as material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material. The homogeneous materials were determined by visual examination and available information on the phases of construction and prior renovations.

Samples were collected at a rate that is in compliance with the requirements of local regulations and guidelines. The sampling strategy was also based on known ban dates and phase out dates of the use of asbestos; sampling of certain building materials is not conducted after specific construction dates. In addition, to be conservative, several years past these dates are added to account for some uncertainty in the exact start / finish date of construction and associated usage of ACM. In some cases, manufactured products such as asbestos cement pipe were visually identified without sample confirmation.

The asbestos analysis of select materials was completed using a stop-positive approach. Only one result meeting the regulated criteria was required to determine that a material is asbestos-containing, but all samples must be analyzed to conclusively determine that a material is non-asbestos. The laboratory stopped analyzing samples from a homogeneous material once a result equal to or greater than the regulated criteria is detected in any of the samples of that material. All samples of a homogeneous material were analyzed if no asbestos is detected. In some cases, all samples were analyzed in the sample set regardless of result.

The analysis was performed in accordance with Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, July 1993.

Analytical results were compared to the following criteria:

Jurisdiction	Friable	Non-Friable
Ontario	0.5%	0.5%

Where building materials are described in the report as “non-asbestos” or “does not contain asbestos”, this means that either no asbestos was detected by the analytical method utilized in any of the multiple samples or, if detected, it is below the lower limit of an asbestos-containing material in the applicable regulation. Additionally, these terms are used for materials which historically are known to not include asbestos in their manufacturing.

1.2 Lead

Samples of distinctive paint finishes, and surface coatings present in more than a limited application, where removal of the paint is possible were collected. The samples were collected by scraping the painted finish to include base and covering applications.

Analysis for lead in paints or surface coatings was performed in accordance with regulated or industry accepted methods, including flame atomic absorption or inductively coupled plasma.

Analytical results were compared to the following criteria.

Jurisdiction	Units (%)	Units (ppm) / (mg/kg)
Ontario	0.009	90

Other lead building products (e.g. batteries, lead sheeting, flashing) were identified by visual observation only.

1.3 Silica

Building materials known to contain crystalline silica (e.g. concrete, cement, tile, brick, masonry, mortar) were identified by visual inspection only. Pinchin did not perform sampling of these materials for laboratory analysis of crystalline silica content.

1.4 Mercury

Building materials, products or equipment (e.g. thermostats, barometers, pressure gauges, lamp tubes), suspected to contain mercury were identified by visual inspection only. Dismantling of equipment



suspected of containing mercury was not performed. Sampling of these materials for laboratory analysis of mercury content was not performed.

APPENDIX IV
Location Summary Report

Client:Hamilton-Wentworth District School Board

Site: 200 Cranbrook Drive, Hamilton, ON

Building Name: R. A. Riddell Public School

Survey Date: 2026-01-19

Last Re-Assessment:

Building Phases: A: 1972 Original, B: 1978 , C: 1988 , D: 1990 , E: 2015

Location No.	Name or Description	Area ft ²	Floor No.	Bldg. Phase	Notes
9005	Vestibule, room no. 136	80	1	C	
9009	Vestibule, room no. 143	80	1	C	
9039	Stairs, room no. 160, 200	400	ALL	A	
9040	Sprinkler Room, room no. 160A	40	1	A	
9071	Stairs, room no. 115	600	ALL	B	
9072	Corridor, room no. 103, 118	800	1	A	
9073	Lobby, room no. 100	700	1	A	
9074	Corridor, room no. 147	1400	1	A	
9075	Corridor, room no. 125	175	1	A	
9076	Corridor, room no. 129	500	1	C	
9077	Corridor, room no. 131	900	1	C	
9078	Corridor, room no. 139	1000	1	C	
9098	Corridor, room no. 224	1400	2	A	
9909	Corridor, room no. 108, 116, 110	900	1	B	108 and 116 - 1978, 110 - 2015
9910	Corridor, room no. 130	200	1	C	
9911	Corridor, room no. 201	300	2	A	
9912	Corridor, room no. 216, 211	600	2	B	

APPENDIX V
Hazardous Materials Summary Report / Sample Log

Client: Hamilton-Wentworth District School Board

Site: 200 Cranbrook Drive, Hamilton, ON

Building Name: R. A. Riddell Public School

Survey Date: 2026-01-19

HAZMAT	Sample No	System/Component/Material/Sample Description	Locations	Bldg. Phase	LF	SF	EA	%	Type	Positive	Friability
Asbestos	S0001 ABC	Ceiling Acoustic Tile Ceiling Tiles (lay-in) 24x48 Pinhole With Width-wise Fissure (armstong Fire Guard)	9039,9071,9072,9912	A,B	0	1100	0	0	None Detected	No	
Asbestos	S0003 ABCDEFG	Wall Paint	9039,9072,9073,9074,9075,9098	A	0	0	0	0	Chrysotile	No	
Asbestos	S0004 ABC	Wall Fire Stop Plaster	9039,9072,9098	A	0	600	0	0	None Detected	No	
Asbestos	S0005 ABCDE	Wall Paint	9071,9909,9912	B	0	0	0	0	None Detected	No	
Asbestos	S0006 ABC	Duct Mastic, Grey	9074	A	0	0	0	0	None Detected	No	
Asbestos	S0007 ABC	Ceiling Soffit Plaster Entrance To Corridor 129 (9076)	9076	C	0	25	0	0	Chrysotile	Yes	PF
Asbestos	S0008 A	Ceiling Debris Tar	9039	A	0	120	0	0	None Detected	No	
Asbestos	V9000	Ceiling Drywall And Joint Compound	9071	B	0	300	0	0	Confirmed Asbestos	Yes	NF
Asbestos	V9000	Ceiling Plaster Textured	9039	A	0	250	0	0	Confirmed Asbestos	Yes	PF
Asbestos	V9000	Piping Rain Water Leader Cement Product	9911,9912	A,B	120	0	0	0	Confirmed Asbestos	Yes	NF
Asbestos	V9500	Floor Vinyl Floor Tile And Mastic 12x12 Beige With Brown Flecks, 12x12 Beige With Brown Streaks, 12x12 Beige With Grey And White Fleck, 12x12 Brown With White Streaks, 12x12 Green With White Streaks, 12x12 Grey With Dark Grey And White Streaks, 12x12 Grey With White And Dark Grey Flecks, 12x12 Taupe With Faint White Flecks, 12x12 White With Blue Streaks	9005,9009,9039,9071,9072,9073,9074,9075,9076 9077,9078,9098,9910,9911,9912	A,B,C	0	8635	0	0	Presumed Asbestos	Yes	NF
Asbestos	V9500	Other Overspray Plaster From Textured Plaster Ceiling	9039	A	0	0	0	100	Presumed Asbestos	Yes	PF
Asbestos	V0000	Ceiling Acoustic Tile Ceiling Tiles (lay-in) 24x48 Pinhole With Length-wise Fissure (particle Board)	9039	A	0	50	0	0	Non Asbestos	No	
Asbestos	V0000	Ceiling Acoustic Tile Ceiling Tiles (lay-in) 24x48 Pinhole With Scattered Flecks (05/12/13)	9909	B	0	0	0	0	Non Asbestos	No	
Asbestos	V0000	Ceiling Acoustic Tile Ceiling Tiles (lay-in) 24x48 Scattered Fleck (04/11/09)	9005,9009,9076,9077,9078,9910,9911	A,C	0	0	0	0	Non Asbestos	No	
Asbestos	V0000	Ceiling Acoustic Tile Ceiling Tiles (lay-in) 24x48 Small Pinholes (06/01/20)	9072	A	0	0	0	0	Non Asbestos	No	
Asbestos	V0000	Ceiling Drywall And Joint Compound Bulkhead And Ceiling (2009 Date Stamp)	9073	A	0	0	0	0	Non Asbestos	No	
Asbestos	V0000	Floor Vinyl Floor Tile And Mastic 12x12 Brown And White Mottled (2015)	9909	B	0	0	0	0	Non Asbestos	No	
Asbestos	V0000	Wall Drywall And Joint Compound 2015	9909	B	0	0	0	0	Non Asbestos	No	

HAZMAT	Sample No	System/Component/Material/Sample Description	Locations	Bldg. Phase	LF	SF	EA	%	Type	Positive	Friability
Asbestos	V0000	Wall Paint	9005,9009,9076,9077,9078,9910	C	0	0	0	0	Non Asbestos	No	
Paint	L0001	Wall Concrete Block Yellow	9039,9072,9073,9074	A	0	0	0	0		No	-
Paint	L0002	Wall Concrete Block White	9071,9909,9912	B	0	0	0	0		No	-
Paint	L0003	Wall Masonry White	9076	C	0	0	0	0		No	-
Paint	L0004	Wall Concrete Block	9005,9009,9076	C	0	0	0	0		No	-
Paint	L0005	Wall Concrete Block Grey	9076	C	0	0	0	0		No	-
Paint	V9500	Structure Steel red	9039,9072,9073,9074,9075,9098,9911	A	0	0	0	100	Presumed Lead	Yes	-
Lead Product	V9500	Batteries In Emer. Lights	9073,9074,9098,9911	A	0	0	4	0	Presumed Lead Product	Yes	-
Mould	V9500	Ceiling Tiles (lay-in)	9039,9077	A,C	0	7	0	0	Water Damage	Yes	-
Hg	V9000	Light Fixture	9040	A	0	0	1	0	Hg	Yes	-
Hg	V0000	Light Fixture	9005,9009,9039,9073,9074,9075,9076,9077,9078 9098,9910,9911	A,C	0	0	0	0	-	No	-
Hg	V0000	Thermostat	9005,9009,9074,9098	A,C	0	0	0	0	-	No	-

Legend:

Sample number		Units		
S####	Asbestos sample collected	SF	Square feet	NF Non Friable material.
L####	Paint sample collected	LF	Linear feet	F Friable material
P####	PCB sample collected	EA	Each	PF Potentially Friable material
M####	Mould sample collected	%	Percentage	
V####	Material visually similar to numbered sample collected			
V0000	Known non Hazardous Material			
V9000	Material is visually identified as Hazardous Material			
V9500	Material is presumed to be Hazardous Material			
[Loc. No.]	Abated Material			

APPENDIX VI
All Data Report

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9005 : Vestibule
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 136
Last Re-Assessment: 0000-00-00

Area (sqft): 80

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with brown flecks			A	Y		80(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						V0000	Non-Asbestos		None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9005 : Vestibule
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 136
Last Re-Assessment: 0000-00-00

Area (sqft): 80

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete Block				V0004		Pb: 0.00018 %	No

Client: Hamilton-Wentworth District School Board
Location: #9005 : Vestibule
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 136
Last Re-Assessment: 0000-00-00

Area (sqft): 80

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Thermostat			V0000	
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9009 : Vestibule
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 143
Last Re-Assessment: 0000-00-00

Area (sqft): 80

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with grey and white fleck			A	Y		80(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Structure	Beam deck joist	Steel			C	N										
Wall		Masonry			A	Y										
Wall		Paint			A	Y						V0000	Non-Asbestos		None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9009 : Vestibule
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 143
Last Re-Assessment: 0000-00-00

Area (sqft): 80

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete Block				V0004		Pb: 0.00018 %	No

Client: Hamilton-Wentworth District School Board
Location: #9009 : Vestibule
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 143
Last Re-Assessment: 0000-00-00

Area (sqft): 80

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Thermostat			V0000	
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9039 : Stairs
Survey Date: 2026-01-19

Site: Schools
Floor: ALL

Building Name: R. A. Riddell Public School
Room #: 160, 200
Last Re-Assessment: 0000-00-00

Area (sqft): 400

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Plaster, Textured			C	Y		250(7)			SF	V9000	Confirmed Asbestos		Confirmed Asbestos	PF
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 pinhole with width-wise fissure (Armstrong Fire Guard)			C	Y		350			SF	S0001A	None Detected	N.D.	None	
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 pinhole with length-wise fissure (particle board)			C	Y		50			SF	V0000	Non-Asbestos		None	
Ceiling	Debris	Tar			C	N				120	SF	S0008A	None Detected	N.D.	None	
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with dark grey and white streaks			A	Y		100(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		200(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor	Stairs	Rubber			A	Y										
Other	Overspray	Plaster, from textured plaster ceiling			D	N		100(7)			%	V9500	Presumed Asbestos		Presumed Asbestos	PF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0003AE	Chrysotile	<0.5%	None	
Wall		Concrete Block			A	Y										
Wall	Fire stop	Plaster			C	N		200			SF	S0004A	None Detected	N.D.	None	

Client: Hamilton-Wentworth District School Board
Location: #9039 : Stairs
Survey Date: 2026-01-19

Site: Schools
Floor: ALL

Building Name: R. A. Riddell Public School
Room #: 160, 200
Last Re-Assessment: 0000-00-00

Area (sqft): 400

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard	
Wall	Concrete Block				L0001	Yellow	Pb: 0.00065 %	No	
Structure	Steel	100		%	V9500	red		[No]	

Client: Hamilton-Wentworth District School Board
Location: #9039 : Stairs
Survey Date: 2026-01-19

Site: Schools
Floor: ALL

Building Name: R. A. Riddell Public School
Room #: 160, 200
Last Re-Assessment: 0000-00-00

Area (sqft): 400

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

Client: Hamilton-Wentworth District School Board
Location: #9039 : Stairs
Survey Date: 2026-01-19

Site: Schools
Floor: ALL

Building Name: R. A. Riddell Public School
Room #: 160, 200
Last Re-Assessment: 0000-00-00

Area (sqft): 400

MOULD								
System	Material	Visible	Quantity	Unit	Sample Type	Sample No	Sample Description	Mould
Ceiling	Ceiling Tiles (lay-in)	Y	5	SF	V	9500		Water Damage

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9040 : Sprinkler Room
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 160A
Last Re-Assessment: 0000-00-00

Area (sqft): 40

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall (no compound)			C	Y										
Floor		Concrete (poured)			B	Y										
Piping		Not Insulated			B	Y										
Wall		Concrete Block			B	Y										

Client: Hamilton-Wentworth District School Board
Location: #9040 : Sprinkler Room
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 160A
Last Re-Assessment: 0000-00-00

Area (sqft): 40

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture	1	EA	V9000	Yes

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board **Site:** Schools
Location: #9071 : Stairs **Floor:** ALL
Survey Date: 2026-01-19

Building Name: R. A. Riddell Public School
Room #: 115 **Area (sqft):** 600
Last Re-Assessment: 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		300(7)			SF	V9000	Confirmed Asbestos		Confirmed Asbestos	NF
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 pinhole with width-wise fissure (Armstrong Fire Guard)			C	Y		350			SF	V0001	None Detected	N.D.	None	
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		200(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor	Stairs	Rubber			A	Y										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0005BCD	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board **Site:** Schools
Location: #9071 : Stairs **Floor:** ALL
Survey Date: 2026-01-19

Building Name: R. A. Riddell Public School
Room #: 115 **Area (sqft):** 600
Last Re-Assessment: 0000-00-00

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard	
Wall	Concrete Block				V0002	white	Pb: 0.0051 %	No	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9072 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 103, 118
Last Re-Assessment: 0000-00-00

Area (sqft): 800

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 pinhole with width-wise fissure (Armstrong Fire Guard)			C	Y		400			SF	S0001C	None Detected	N.D.	None	
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 small pinholes (06/01/20)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		800(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0003C	Chrysotile	<0.5%	None	
Wall		Concrete Block			A	Y										
Wall	Fire stop	Plaster			C	N		200			SF	S0004C	None Detected	N.D.	None	

Client: Hamilton-Wentworth District School Board
Location: #9072 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 103, 118
Last Re-Assessment: 0000-00-00

Area (sqft): 800

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete Block				V0001	Yellow	Pb: 0.00065 %	No
Structure	Steel	100		%	V9500	red		[No]

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9073 : Lobby
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 100
Last Re-Assessment: 0000-00-00

Area (sqft): 700

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound, bulkhead and ceiling (2009 date stamp)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with dark grey and white streaks			A	Y		700(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0003D	Chrysotile	<0.5%	None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9073 : Lobby
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 100
Last Re-Assessment: 0000-00-00

Area (sqft): 700

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description		Amount	Hazard
Wall	Concrete Block				V0001	Yellow		Pb: 0.00065 %	No
Structure	Steel	100		%	V9500	red			[No]

Client: Hamilton-Wentworth District School Board
Location: #9073 : Lobby
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 100
Last Re-Assessment: 0000-00-00

Area (sqft): 700

PB PRODUCTS				
Component	Quantity	Unit	Sample	Hazard
Batteries In Emer. Lights	1	EA	V9500	Presumed

Client: Hamilton-Wentworth District School Board
Location: #9073 : Lobby
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 100
Last Re-Assessment: 0000-00-00

Area (sqft): 700

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9074 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 147
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Duct		Mastic, Grey			C	N						S0006ABC	None Detected	N.D.	None	
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		1400(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0003F	Chrysotile	<0.5%	None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9074 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 147
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description		Amount	Hazard
Wall	Concrete Block				V0001	Yellow		Pb: 0.00065 %	No
Structure	Steel	100		%	V9500	red			[No]

Client: Hamilton-Wentworth District School Board
Location: #9074 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 147
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

PB PRODUCTS				
Component	Quantity	Unit	Sample	Hazard
Batteries In Emer. Lights	1	EA	V9500	Presumed

Client: Hamilton-Wentworth District School Board
Location: #9074 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 147
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	
Thermostat			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9075 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 125
Last Re-Assessment: 0000-00-00

Area (sqft): 175

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with dark grey and white streaks			A	Y		175(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0003G	Chrysotile	<0.5%	None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9075 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 125
Last Re-Assessment: 0000-00-00

Area (sqft): 175

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard	
Structure	Steel	100		%	V9500	red		[No]	

Client: Hamilton-Wentworth District School Board
Location: #9075 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 125
Last Re-Assessment: 0000-00-00

Area (sqft): 175

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9076 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 129
Last Re-Assessment: 0000-00-00

Area (sqft): 500

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Ceiling	Soffit	Plaster, former exterior soffit, entrance to corridor 125 (location 9075)			C	Y		25(7)			SF	S0007ABC	Chrysotile	0.5-5%	Confirmed Asbestos	PF
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 brown with white streaks			A	Y		420(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with brown streaks			A	Y		20(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with white and dark grey flecks			A	Y		20(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Vinyl Floor Tile and Mastic, 12x12 taupe with faint white flecks			A	Y		40(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Masonry			A	Y										
Wall		Paint			A	Y						V0000	Non-Asbestos		None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9076 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 129
Last Re-Assessment: 0000-00-00

Area (sqft): 500

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard	
Wall	Masonry				L0003	white	Pb: 0.0012 %	No	
Wall	Concrete Block				L0004		Pb: 0.00018 %	No	
Wall	Concrete Block				L0005	grey	Pb: 0.00043 %	No	

Client: Hamilton-Wentworth District School Board
Location: #9076 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 129
Last Re-Assessment: 0000-00-00

Area (sqft): 500

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9077 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 131
Last Re-Assessment: 0000-00-00

Area (sqft): 900

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with grey and white fleck			A	Y		750(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Vinyl Floor Tile and Mastic, 12x12 white with blue streaks			A	Y		150(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Masonry			A	Y										
Wall		Paint			A	Y						V0000	Non-Asbestos		None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9077 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 131
Last Re-Assessment: 0000-00-00

Area (sqft): 900

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

Client: Hamilton-Wentworth District School Board
Location: #9077 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 131
Last Re-Assessment: 0000-00-00

Area (sqft): 900

MOULD							
System	Material	Visible	Quantity	Unit	Sample Type	Sample No	Mould
Ceiling	Ceiling Tiles (lay-in)		2	SF	V	9500	Water Damage

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9078 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 139
Last Re-Assessment: 0000-00-00

Area (sqft): 1000

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with grey and white fleck			A	Y		1000(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Masonry			A	Y										
Wall		Paint			A	Y						V0000	Non-Asbestos		None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9078 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 139
Last Re-Assessment: 0000-00-00

Area (sqft): 1000

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9098 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 224
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		1400(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			A	Y										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0003B	Chrysotile	<0.5%	None	
Wall		Concrete Block			A	Y										
Wall	Fire stop	Plaster			C	N		200			SF	S0004B	None Detected	N.D.	None	

Client: Hamilton-Wentworth District School Board
Location: #9098 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 224
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description		Amount	Hazard
Structure	Steel	100		%	V9500	red			[No]

Client: Hamilton-Wentworth District School Board
Location: #9098 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 224
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

PB PRODUCTS				
Component	Quantity	Unit	Sample	Hazard
Batteries In Emer. Lights	1	EA	V9500	Presumed

Client: Hamilton-Wentworth District School Board
Location: #9098 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 224
Last Re-Assessment: 0000-00-00

Area (sqft): 1400

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	
Thermostat			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board **Site:** Schools
Location: #9909 : Corridor **Floor:** 1
Survey Date: 2026-01-19

Building Name: R. A. Riddell Public School
Room #: 108, 116, 110 **Area (sqft):** 900
Last Re-Assessment: 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 pinhole with scattered flecks (05/12/13)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 brown and white mottled (2015)			A	Y						V0000	Non-Asbestos		None	
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Drywall and joint compound, 2015			A	Y						V0000	Non-Asbestos		None	
Wall		Paint			A	Y						S0005E	None Detected	N.D.	None	

108 and 116 - 1978, 110 - 2015

Client: Hamilton-Wentworth District School Board **Site:** Schools
Location: #9909 : Corridor **Floor:** 1
Survey Date: 2026-01-19

Building Name: R. A. Riddell Public School
Room #: 108, 116, 110 **Area (sqft):** 900
Last Re-Assessment: 0000-00-00

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard	
Wall	Concrete Block				V0002	white	Pb: 0.0051 %	No	

108 and 116 - 1978, 110 - 2015

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9910 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 130
Last Re-Assessment: 0000-00-00

Area (sqft): 200

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with grey and white fleck			A	Y		100(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Vinyl Floor Tile and Mastic, 12x12 brown with white streaks			A	Y		100(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Masonry			A	Y										
Wall		Paint			A	Y						V0000	Non-Asbestos		None	
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9910 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 1

Building Name: R. A. Riddell Public School
Room #: 130
Last Re-Assessment: 0000-00-00

Area (sqft): 200

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9911 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 201
Last Re-Assessment: 0000-00-00

Area (sqft): 300

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 scattered fleck (04/11/09)			C	Y						V0000	Non-Asbestos		None	
Duct		Fibreglass	Insulation		C	N										
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		300(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Piping		Not Insulated			C	N										
Piping	Rain water leader	Cement Product			C	N		50(7)			LF	V9000	Confirmed Asbestos		Confirmed Asbestos	NF
Structure	Beam deck joist	Steel			C	N										
Wall		Concrete Block			A	Y										

Client: Hamilton-Wentworth District School Board
Location: #9911 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 201
Last Re-Assessment: 0000-00-00

Area (sqft): 300

PAINT									
System	Item	Good	Poor	Unit	Sample	Sample Description			Hazard
Structure	Steel	100		%	V9500	red			[No]

Client: Hamilton-Wentworth District School Board
Location: #9911 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 201
Last Re-Assessment: 0000-00-00

Area (sqft): 300

PB PRODUCTS				
Component	Quantity	Unit	Sample	Hazard
Batteries In Emer. Lights	1	EA	V9500	Presumed

Client: Hamilton-Wentworth District School Board
Location: #9911 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 201
Last Re-Assessment: 0000-00-00

Area (sqft): 300

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Light Fixture			V0000	

ALL DATA REPORT

Client: Hamilton-Wentworth District School Board
Location: #9912 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 216, 211
Last Re-Assessment: 0000-00-00

Area (sqft): 600

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic tile	Ceiling Tiles (lay-in), 24x48 pinhole with width-wise fissure (Armstrong Fire Guard)			C	Y					SF	S0001B	None Detected	N.D.	None	
Duct		Fibreglass	Insulation		C	N										
Duct		Not Insulated			C	N										
Floor		Vinyl Floor Tile and Mastic, 12x12 green with white streaks			A	Y		600(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Piping		Cement Product			C	N		70(7)			LF	V9000	Confirmed Asbestos		Confirmed Asbestos	NF
Piping		Fibreglass	Insulation		C	N										
Piping		Not Insulated			C	N										
Structure	Beam deck joist	Steel			C	N										
Wall		Paint			A	Y						S0005A	None Detected	N.D.	None	

Client: Hamilton-Wentworth District School Board
Location: #9912 : Corridor
Survey Date: 2026-01-19

Site: Schools
Floor: 2

Building Name: R. A. Riddell Public School
Room #: 216, 211
Last Re-Assessment: 0000-00-00

Area (sqft): 600

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete Block				L0002	white	Pb: 0.0051 %	No

Legend:

Sample number	Units	Other
S#### Asbestos sample collected	SF Square feet	A Access
L#### Paint sample collected	LF Linear feet	V Visible
P#### PCB sample collected	EA Each	AP Air Plenum
M#### Mould sample collected	% Percentage	F Friable material
V#### Material is visually identified to be identical to S####	LF Linear feet	NF Non Friable material
V0000 Known non hazardous material		PF Potentially Friable material
V9000 Material visually identified as a Hazardous Material		Pb Lead
V9500 Material is presumed to be a hazardous material		Hg Mercury
		As Arsenic
		Cr Chromium

Access
A Accessible to all building occupants
B Accessible to maintenance and operations staff without a ladder
C Accessible to maintenance and operations staff with a ladder. Also rarely entered, locked areas
D Not normally accessible

Condition
Good No visible damage or deterioration
Fair Minor, repairable damage, cracking, delamination or deterioration
Poor Irreparable damage or deterioration with exposed and missing material

Visible
Y The material is visible when standing on the floor of the room, without the removal or opening of other building components (e.g. ceiling tiles or access panels).
N The material is not visible to view when standing on the floor of the room and requires the removal of a building component (e.g. ceilings tiles or access panels) to view and access. Includes rarely entered crawlspaces, attic spaces, etc. Observations will be limited to the extent visible from the access points.
L The material is partially visible to view when standing on the floor of the room and requires the removal of a building component (e.g. ceiling system or access panels) to view completely and access. Includes partially viewed access points to crawlspaces, attic spaces, etc. without entering. Observations are limited to the extent visible from the access points.

Air Plenum
Yes or No The material is in a return air plenum or in a direct airstream or there is evidence of air erosion (e.g. duct for heating or cooling blowing directly on or across an ACM). This field is only completed where Air Plenum consideration is required by regulation.

Colour Coding
The material is a hazardous material, either by analytical results or by visible identification.
The material is presumed to be a hazardous material, based on visual appearance, and was not sampled due to limited access or the non-destructive nature of sampling.

Action					
(1)	Clean up of ACM Debris	(2)	Precautions for Access Which may Disturb ACM Debris	(3)	ACM removal
(4)	Precautions for Work Which may Disturb ACM in Poor Condition	(5)	Proactive ACM removal (Minimum repair required for fair condition)	(6)	ACM repair
(7)	Management program and surveillance				

APPENDIX VII
Photographs



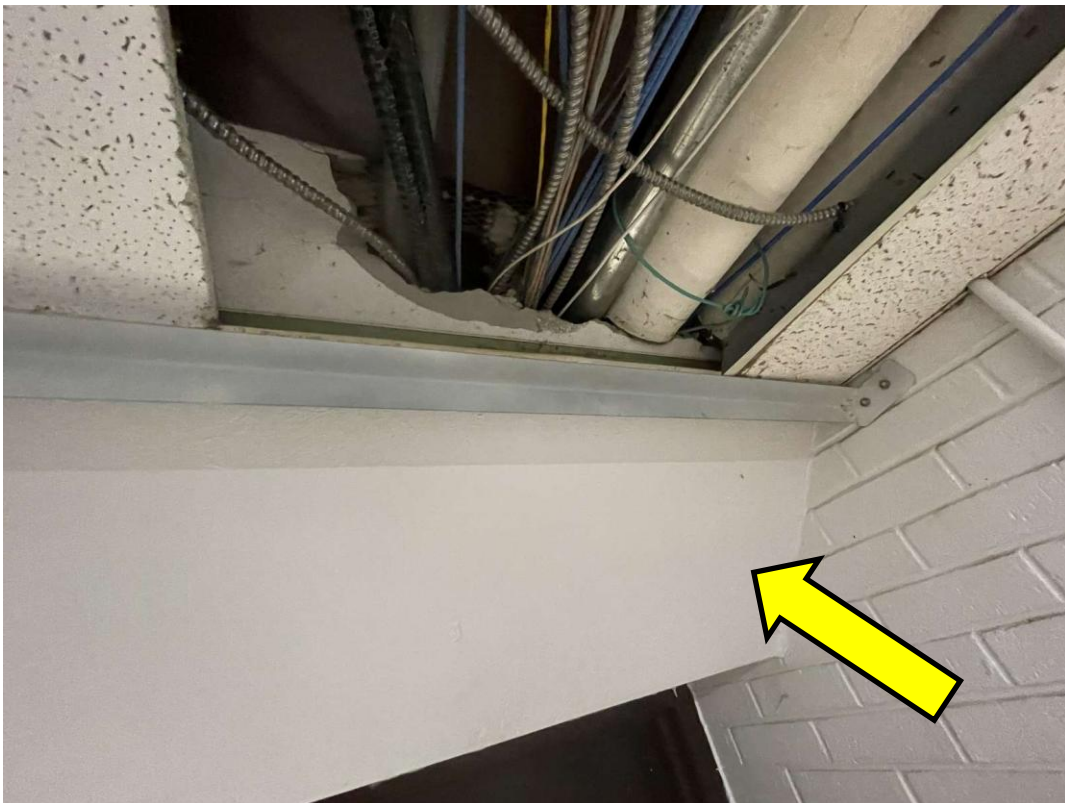
S0001A (None), 24x48 pinhole with width-wise fissure (Armstrong Fire Guard), Ceiling, ACOUSTIC TILE, Ceiling Tiles (lay-in), Stairs (Location #: 9039)



S0003C (None), Wall, Paint, Corridor (Location #: 9072)



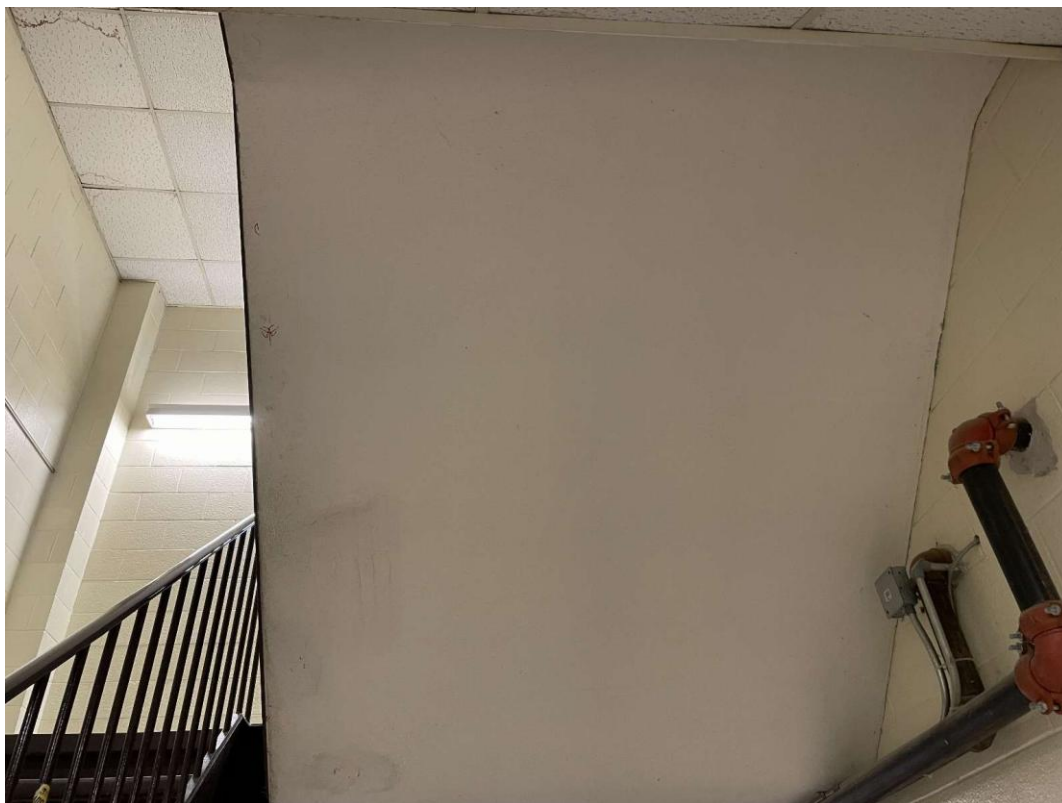
S0006A (None), Duct, Mastic, Grey, Corridor (Location #: 9074)



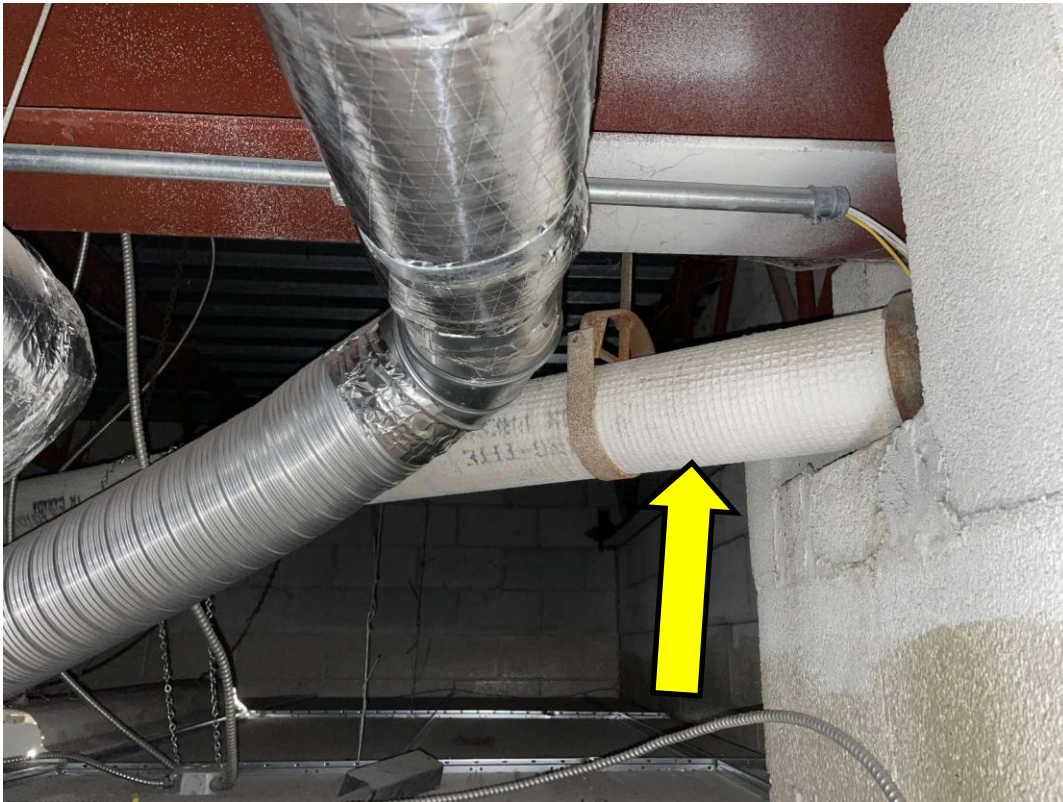
S0007A (Confirmed Asbestos), entrance to corridor 129 (9076), Ceiling, Soffit, Plaster, Corridor (Location #: 9075)



V9000 (Confirmed Asbestos), Textured, Ceiling, Plaster, Stairs (Location #: 9039)



V9000 (Confirmed Asbestos), Ceiling, Drywall and joint compound, Stairs (Location #: 9071)



V9000 (Confirmed Asbestos), Piping, Rain Water Leader, Cement Product, Corridor (Location #: 9911)



V9500 (Presumed Asbestos), 12x12 beige with brown flecks, Floor, Vinyl Floor Tile and Mastic, Vestibule (Location #: 9005)



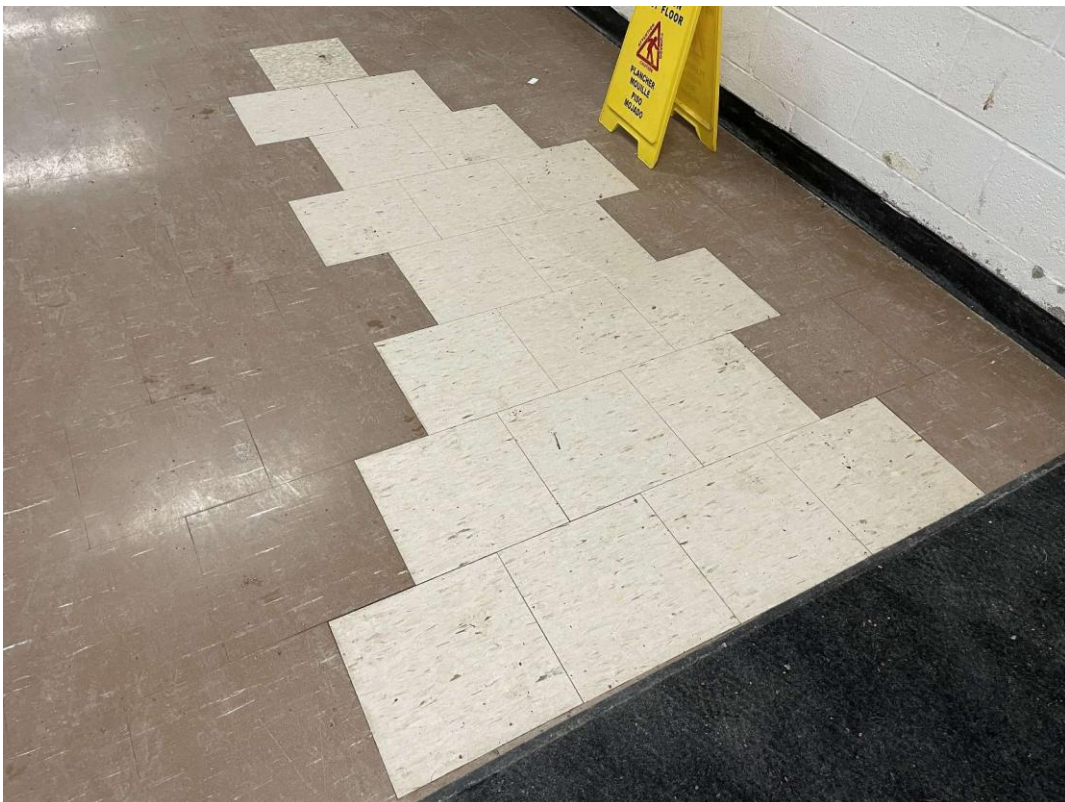
V9500 (Presumed Asbestos), 12x12 green with white streaks, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9072)



V9500 (Presumed Asbestos), 12x12 grey with dark grey and white streaks, Floor, Vinyl Floor Tile and Mastic, Lobby (Location #: 9073)



V9500 (Presumed Asbestos), 12x12 brown with white streaks, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9076)



V9500 (Presumed Asbestos), 12x12 beige with brown streaks, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9076)



V9500 (Presumed Asbestos), 12x12 taupe with faint white flecks, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9076)



V9500 (Presumed Asbestos), 12x12 white with blue streaks, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9077)



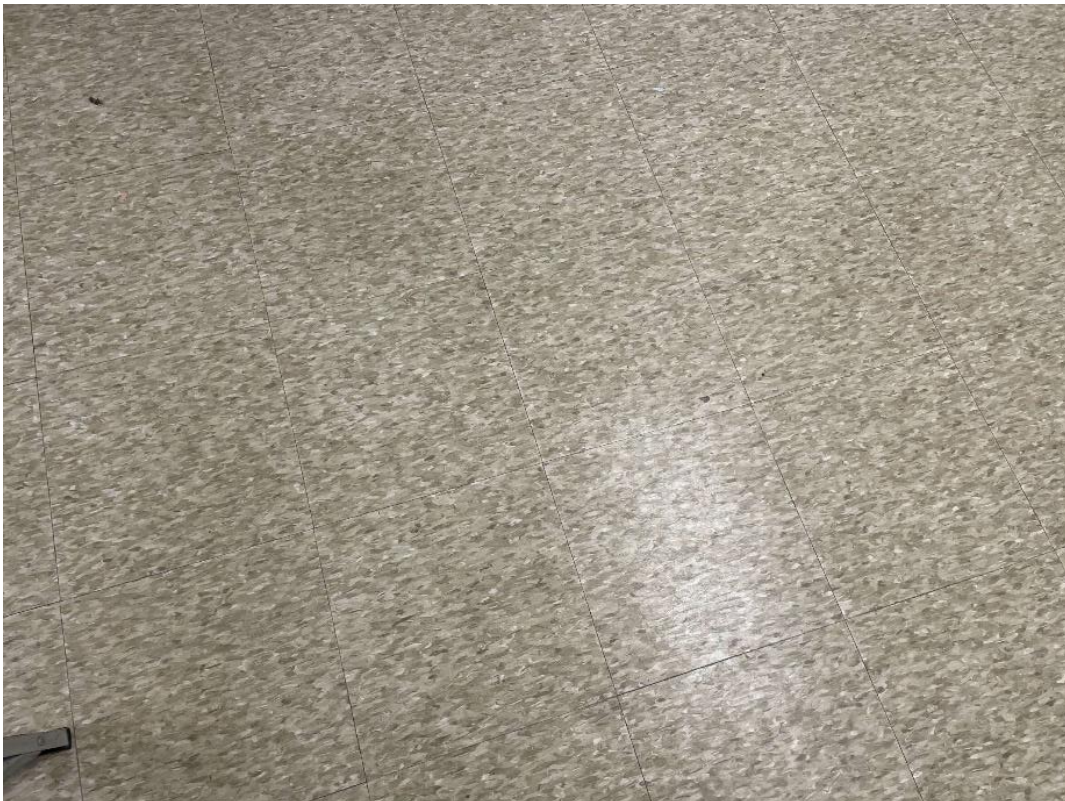
V9500 (Presumed Asbestos), 12x12 beige with grey and white fleck, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9078)



V0000 (None), 24x48 pinhole with length-wise fissure (particle board), Ceiling, ACOUSTIC TILE, Ceiling Tiles (lay-in), Stairs (Location #: 9039)



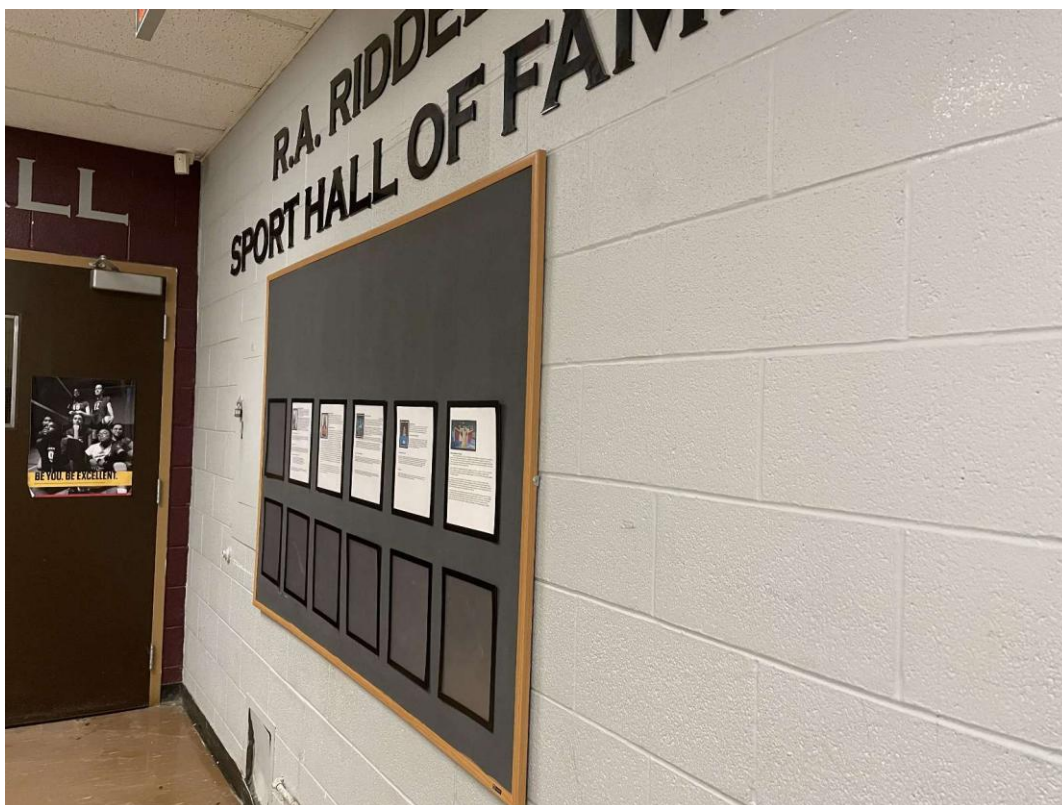
V0000 (None), bulkhead and ceiling (2009 date stamp), Ceiling, Drywall and joint compound, Lobby (Location #: 9073)



V0000 (None), 12x12 brown and white mottled (2015), Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 9909)



V0000 (None), 24x48 scattered fleck (04/11/09), Ceiling, ACOUSTIC TILE, Ceiling Tiles (lay-in), Corridor (Location #: 9911)



L0002(Lead, None), white, Wall, Corridor (Location #: 9912)



Mercury, V9000(Yes), Light Fixture, Sprinkler Room (Location #: 9040)