SPECIFICATIONS FOR

Proposed Washroom

Renovations for

Frank Panabaker North

Campus School

Hamilton-Wentworth

District School Board

Issued for Tender

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Mechanical produced Shellard Building Systems Ltd.

1. GENERAL REQUIREMENTS

The rules and information that follow are for the protection of all persons using Hamilton-Wentworth District School Board's property. The Contractor must follow the directions. Failure to conduct work in a safe and healthy manner may result in removal of employees from Board property and/or termination of contract. The rules contained here will not cover all repair/renovation/construction work situations. The Contractor, however, must understand that the Board's intention is to carry out all work in a safe and healthy manner. Every Contractor and sub-contractor employed on site shall read all the instructions herein. Reference to the 'Board' or 'Client/Owner' herein means the Hamilton-Wentworth District School Board.

2. REPORT TO OFFICE

All Contractors entering schools MUST REPORT TO THE SCHOOL OFFICE AND SIGN IN Describe what you plan to do and how long it will take and sign out before they leave.

3. WORK SITE LOCATION

It is the responsibility of the contractors to provide appropriate and adequate rope, barricades, fencing, hoarding, warning signs, warning lights to clearly demark the site boarders and areas not to be used by usual occupants of the building or grounds. Without limiting the generality of the foregoing, the Contractor shall at all times erect and maintain adequate fencing around all excavations, pits, and in other places of danger. Sufficient barricades must be in place to prevent persons from potentially placing themselves in danger.

4. OPERATION OF VEHICLES ON BOARD PROPERTY

Trucks, etc., shall proceed with caution at 10 KPH maximum on school property. When children are playing, coming or going from school, etc., trucks and other vehicles will be stopped and remain stopped until all children enter the school or leave school grounds. All trucks must be equipped with an automatic warning beep or horn sound when backing up. If there are two people in the truck, one should get out and walk behind the truck while it is backing up, and act as a signaler.

The Contractor must provide a list of their mobile equipment requirements on site. Before entering Board property, the Owner/Client must have this list and the appropriate arrangements made for access onto Board grounds.

Construction vehicles used on Board property must not be loaded beyond their licensed capacity, and passengers must ride within the cab, except when backing up. Riding upon running boards, fenders, hoods, scraper blades, and buckets, or in boxes or other attachments is prohibited. Employees must not board nor jump off moving vehicles.

Signs shall be posted in prominent locations and in sufficient numbers to warn workers of a hazard on a project.

Construction vehicles must be left in designated areas and, when not in use, must not obstruct emergency vehicles or public ways.

Access to the construction site will be established by the Owner/Client prior to the start of construction.

5. **DISCOVERY OF UNKNOWN SUBSTANCE**

The hazardous substances locations listed in the current Designated Substances Report provided by the Owner may not be complete. If an unknown substance is discovered during a renovation/repair that may be asbestos, then notify the Owner immediately, and the material must not be disturbed until a sample is analyzed. Contact the Environmental Consultant for further action. Copy the Prime Consultant and Owner/Client.

6. **HAZARDOUS MATERIALS**

Work described within the Hazardous Materials specifications is required to be performed by a qualified Abatement Contractor on the HWDSB's prequalification list.

7. **ASBESTOS**

The Contractors are responsible to provide asbestos awareness training to their employees. All schools have lists of asbestos and its location in the school. It is available through the school office and should be checked before starting new work. If the job is a large renovation, the Contractor will have been provided with a more detailed pre-renovation asbestos survey. This also should be read before commencing new work.

8. **SILICA**

Silica: the general contractor and sub-trades are required to ensure all work is performed in accordance with the Silica on Construction Projects guideline, as published on the Province of Ontario's website.
https://www.ontario.ca/document/silica-construction-projects#

9. **LEAD**

Lead: the general contractor and sub-trades are required to ensure all work is performed in accordance with the Lead on Construction Projects guideline, as published on the Ministry of Labour, Immigration, Training and Skills Development website.
https://www.labour.gov.on.ca/english/hs/pubs/lead/

10. **MERCURY**

Mercury: the general contractor and sub-trades are required to ensure all work performed to remove and dispose of mercury-containing fluorescent lights and mercury-containing items (e.g. thermostats) is completed by workers who have been trained by a competent and qualified person.

11. **PCB**

PCBs: the general contractor and sub-trades are required to ensure all work performed to remove and dispose of PCB-containing ballasts is completed in strict accordance with federal regulations. Removal and handling of PCBs is to be performed by workers who have been trained by a competent and qualified person.

12. **TOOLS AND EQUIPMENT**

All vehicles, machinery, tools and equipment shall be inspected regularly and shall be maintained in a condition that does not endanger a worker. Equipment includes all guards and other safety devices. Gasoline engines are to be shut down and cold before refueling.

13. **PROPANE TANKS**

Propane tanks shall not be stored in school buildings overnight.

A qualified person with an Ontario Propane License will be the only one allowed to work on propane installations or to supervise the moving of these installations.

No storage area for propane at any time should be placed closer than three (3) meters to a source of ignition or fire, except as allowed under the regulations.

When cylinders are not in use, they must be protected from falling materials.

Cylinders must always be transported by some material handling device (not carried manually). When being transported in vehicles, the movement of cylinders should be prevented and the cylinders must have their gauges removed, and caps installed. Cylinders must never be hoisted with a rope or chain sling.

14. **OXYGEN AND ACETYLENE CYLINDERS**

Oxygen and acetylene cylinders must be chained in the vertical position or be strapped on a welding cart designed for the purpose. When not on a cart, the cylinder pressure gauge must be removed and the cylinder cap on. Full and empty tanks are to be stored in separate signed areas.

Cylinders must always be transported by some material handling device (not carried manually). When being transported in vehicles, the movement of cylinders should be prevented and the cylinders must have their gauges removed, and caps installed. Cylinders must never be hoisted with a rope or chain sling.

15. **FLAMMABLE LIQUIDS**

All oakum, rags, or other materials impregnated with paint thinners, etc., must be stored in an approved, labeled container and/or area.

Approved safety containers must be used for the storage and transportation of flammable materials. All containers must be appropriately labeled according to WHMIS Legislation.

Where flammable materials are being transported or transferred, they must be properly secured and ventilated.

16. **CONTROLLED PRODUCTS**

All controlled products must have the most recent WHMIS labels on the container brought to the school. One day's supply may be used without a label if used by one employee exclusively. Contractors must be able to show that they have attended a WHMIS training course.

Contractors must comply with all aspects of the Workplace Hazardous Materials Information System (Ontario Regulation 644/88).

Contractors must have all controlled products labeled according to WHMIS Legislations when the materials are brought onto Board property. Contractors must provide Workplace Labels for controlled products which do not have supplier labels on the containers.

Contractors must have copies of Safety Data Sheets (SDSs) for all controlled products they bring onto Board property readily available at the worksite. The Contractor must ensure that the information on the SDS is up to date (SDSs are valid for three (3) years from the date of production).

Any Board employee or any Contractor working for the Board may request, through the Facility Services Representative, a copy of any or all SDSs for controlled products used by the Contractor, if the controlled products are used or contained in an area where Board employees or other contractors may enter.

Contractors who use controlled products must ensure that their workers are properly trained in the safe use and handling of such products. Contractor's employees must be trained through the Infrastructure Health and Safety Association or Hamilton-Halton Construction Association programs for construction workers. In addition, contractors should review with their employees: fire hazard information, health hazard information, controls which should be in place, and protective equipment that should be used.

17. **NATURAL GAS PIPING**

Only persons with a gas-fitter's license are to tighten or loosen, install or remove a natural gas fitting, device, or pipe.

18. **SAFETY EQUIPMENT**

The Contractors are responsible for and obligated to have all employees wear such protective clothing and use such personal protective equipment and devices as are necessary to protect the worker against the hazards to which the worker may be exposed. Workers required to wear protective clothing or use personal protective equipment or devices shall be adequately instructed and trained by the contractor in the care and use of the clothing, equipment or devices before wearing or using them. Safety equipment shall include but not be limited to, safety boots, hard hats, safety glasses, goggles, gloves, respirators, hearing protection devices, safety belts, safety harness, and lifelines.

19. **FIRE EXTINGUISHERS**

The Contractors are responsible for providing fire extinguishers in the repair/renovations/construction areas at readily accessible and adequately marked locations. Contractors shall ensure that employees are able to use the extinguishers in a safe and proper manner. Fire extinguishers must be protected from physical damage or from freezing. After a fire extinguisher is used, it shall be refilled or replaced immediately. Every fire extinguisher shall be inspected for defects or deterioration, at least once a month by a competent worker who shall record the date of the inspection on a tag attached to it. Fire extinguishing equipment shall be of a suitable type and size to permit the evacuation of workers during a fire.

20. **SMOKING/VAPING**

Smoking and Vaping on school property is not permitted.

21. **ALCOHOL & DRUGS**

Consuming alcohol or drugs on Board property work sites is prohibited. Persons appearing to use alcohol or drugs may be removed from the site.

22. **HOUSEKEEPING**

If a form work tie, reinforcing steel, a nail or another object protruding from concrete or another surface may endanger a worker, the protrusion shall be removed or cut off at the surface or otherwise protected as soon as practicable. Materials must be laid down and piled, stored or moved in a manner that does not endanger a worker. Pieces of pipe, welding rod, and small round objects must be placed in refuse containers and not left on the floor.

23. **HYGIENE**

A reasonable supply of portable drinking water should be kept readily accessible at a project for the use of workers in accordance with the Regulations. The Contractor shall provide or arrange for the use of portable toilet and clean up facilities before work is started on a project. Such facilities to be reasonable accessible. Workers who use corrosive, poisonous or other substances likely to endanger their health shall be provided by the contractor with washing facilities with clean water, soap and individual towels.

24. **ELECTRICAL WIRING**

Only journey-persons electricians are to work on building electrical wiring, switches, etc., including temporary power tie-ins.

25. **LADDERS, SCAFFOLDS, SWING STAGES, VERTICAL MAN-LIFTS**

The Contractors are responsible for training their employees in inspecting, erecting, dismantling, and using scaffolds, ladders, swing stages, and vertical man-lifts per Working at Heights Standards O.Reg 297/13. A scaffold shall be designed by a professional engineer where required by the Regulations and every scaffold, suspended platform, suspended scaffold, elevating work platform or boatswain's chair shall meet the requirements of the Regulations of the OHSA.

When no figures are given, the drawings shall be followed to scale, but figures shall govern in all cases of difference. Larger scale drawings shall govern all smaller scale drawings.

The drawings and this specification shall be considered co-operative. All work necessary to the completion of the contract, whether shown on the plans and not described herein, or vice-versa, shall be considered a part of this contract and must be properly executed.

The Contractor will understand that the work herein described and shown on drawings shall be complete in every detail, notwithstanding every item necessarily involved is not particularly mentioned, and the Contractor will be held to provide all labour and materials necessary for the entire completion of the work intended to be described, and shall not avail himself of any manifestly unintentional error or omission, should such exist.

26. **LOCATION OF APPARATUS**

The location of apparatus, fixtures, outlets, etc., shown or specified shall be considered as only approximate. The actual location shall be as directed and as required to suit the conditions at the time of installation. Before installation of the apparatus, the Contractor shall consult the Board and ascertain the actual location required.

27. **MEASUREMENTS, ETC.**

Before ordering any material or doing any work, such Contractor shall verify all measurements at the building or as may be required for the proper fitting of their work and to make adjustable parts fit to fixed parts. They shall be responsible for the correctness of their figures, and properly correct without charge any work which does not fit, and furnish new work if necessary.

No extra charge will be allowed on account of the differences between the actual dimensions and the measurements indicated on the drawings. Any difference which may be found shall be submitted to the Board for consideration before proceeding with the work.

28. **CUTTING, PATCHING AND DIGGING**

The Contractor before any cutting/coring, shall electromagnetically or otherwise scan all walls and/or floors for in wall or in/or under slab existing electrical lines, water, heating, sanitary, gas piping and any ductwork. Structural reinforced walls and slabs shall be x-ray scanned for structural reinforcing. All scanning reports shall be sent to the Architect for review.

The Contractor shall do all cutting, fitting or patching of their work that may be required to make its several parts come together properly and fit to it receive or be received by work of other Contractors shown upon or reasonably implied by the contract documents, and he shall make good after them as the Board may direct.

All cutting of the various trades shall be done only by skilled mechanics and competent persons of such trades, and all such cutting shall be made good by competent workers of each trade only.

Any cost caused by ill-timed work shall be borne by the party responsible therefore.

The Contractor shall not endanger any existing work by cutting, digging or otherwise, and shall not cut or alter the work of another Contractor save with the consent of the Board.

29. **FURRING IN PIPES AND DUCTS**

The General Contractor shall be responsible for an acceptable job of furring in all pipes and ducts where shown on the plans or reasonably expected in finished rooms. Furring in shall be carried out in the material of the walls, adjacent to the pipes, such as metal stud, wood, masonry, etc.

30. **MOISTURE TESTING OF CONCRETE SLABS**

The Contractor shall be responsible for all moisture testing of existing or newly poured/cured concrete slabs by in-situ concrete relative humidity test to ASTM F2170, a minimum of 4 drilled probes shall be randomly placed to measure humidity (RH) levels in each area. Relative humidity level of substrate surface for respective specified finished flooring products shall meet the manufacturer’s recommendations of those products. If RH readings are above the recommended levels, the Contractor shall first use dehumidification equipment to bring relative humidity to acceptable levels or provide a full cover moisture mitigation membrane as specified in the flooring sections. After testing is done the Contractor shall patch all drilled probe holes flush to match existing materials.

31. **BROKEN GLASS**

The Contractor shall be held responsible for all damaged, broken or scratched glass in areas affected by their work, and at completion shall replace at their own expense all such glass.

32. **OWNER'S EQUIPMENT**

All equipment, fixtures, doors, hardware and all other items removed in the course of renovations, and not required for completion of the contract, shall be handed in to the Board. A list of these items (in duplicate) shall be prepared and signed by the Contractor's and the Facility Services Department's representatives.

33. **CLEANING UP**

In addition to the housekeeping requirements as set out under paragraph 16., if the work consists of renovation work in an existing school or Board building, the building must be cleaned of all such materials at the close of each day's work. Each sub-contractor shall clean their own work.

Upon completion of the work, all debris, surplus materials, tools and equipment shall be cleaned up and removed from the building and the site and the building left broom clean and the site in a neat and tidy condition to the satisfaction of the Board. The Contractor shall clean all floors, glass, painted and stained woodwork, all hardware, fixtures, and equipment.

34. **GUARANTEES**

General

All work is to be guaranteed for a period of one (1) year after 100 percent completion of the work, during which time any imperfections which may develop in the workmanship or materials used or any work affected in making good such imperfections must be made good promptly by the Contractor without cost to the Board.

A warranty inspection is to be made just prior to the termination of the guarantee period to list all outstanding imperfections to be corrected by the contractor at no cost to the Board.

35. **ACCEPTANCE**

By reason of having submitted a tender on the work described herein, the general contractor does hereby acknowledge that they have read the specifications and do hereby accept these conditions and specifications as the instructions governing the work.

36. **UNIONS**

It is wholly the Contractor's and their Subcontractors responsibility to follow all Trade Union requirements for which they are signed. If conflicts, disputes, pickets or any other disturbances or lost time occurs, the Contractor must take the necessary steps expediently to resolve the matter. The Board and the Consultant will not be held liable for any cost of injunctions or lost time.

37. **MAINTANENCE MATERIALS**

Provide all maintenance materials to the Owner as outlined in each specification sections.

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1.1 **INTENT**

.1 This section outlines the general conditions that shall be administered by the General Contractor. While the specification section establishes the requirements for each trade, the General (or Principal) Contractor shall directly supervise and administer all contract requirements to ensure the provision of materials, labour and equipment necessary to complete the work on time and to the quality specified. Reference to GC refers to General Conditions for Public and Invitational Tenders as amended by Supplementary General Conditions.

2.1 **SCOPE OF WORK**

.1 The general scope of work shall include, but not be limited to, the supply of labour, equipment, materials, and transportation to execute work in accordance with the drawings and specifications.

3.1 **QUALIFICATION OF CONTRACTOR**

.1 All work shall be done by a recognized established qualified and competent contractor. This contractor shall employ only skilled mechanics or installers who have been thoroughly trained or competent in carrying out the work specified in the contract.

.2 Where required by a manufacturer of specialty products, only contractors that are approved as applicators shall be utilized.

4.1 **CONSTRUCTION SCHEDULE AND ON-SITE PROJECT DOCUMENTS**

.1 Within receipt of the authorization letter to proceed by Owner, prepare and submit a detailed Construction Schedule, clearly showing the anticipated progress stages, start and finish date of each construction phase and date of final completion with-in 10 working days showing dates for the following:

a) Submission of material sample submittals (along with an itemized list of samples to be submitted)

b) Submission of shop drawings (along with an itemized list of shop drawings to be submitted)

c) Supply and installation of:

i) All new ceilings
ii) All new flooring
iii) All other Architectural work shown on drawings or specified herein
iv) All HVAC Equipment
v) All New Lighting
vi) Mechanical items in Sections 15
vii) Electrical items in Sections 16

.2 On approval of the Construction Schedule by the Owner, proceed to ensure completion of work within the scheduled time. Carry out work in a continuous manner. If at any time one phase falls behind schedule, take necessary measures to expedite subsequent phases to maintain or improve on completion date.

.3 Maintain at the job site, one copy each of following:

a) Contract Drawings (architectural, engineering and all related consulting drawings)
b) Specifications
c) Addenda
d) Reviewed shop drawings
e) Change Orders, Contemplated Change Orders and Change Directives/Notices
f) Site/Field Instructions
g) Other modifications to contract
h) Field test reports
i) Copy of approved Construction Schedule
j) Manufacturers' installation and application instructions.
k) List of Sub-contractors
l) Progress photographs
m) Record Set of Drawings (being progressively updated)
n) Minutes of Meetings
o) Building Permit

5.1 SPECIFICATIONS

.1 Portions of Specifications are written in short form. Therefore, it shall be understood that where item of Work is stated in heading followed by material, equipment, component, or operation, words "shall be", "shall consist of" or similar words or phrases are implied which denote supply, fabricate and supply, install, provide or commission of such materials, equipment or operations for component of Work designated by heading.

.2 Whenever used in Specifications the following definitions shall apply:

a) SUPPLY - Procurement or fabrication of standard components not to special design of materials, equipment, or components, or performance of services to extent indicated. Where used with respect to materials, equipment, or components, term shall include delivery to Site but is not intended to include installation of item, either temporary or final.
b) FABRICATE AND SUPPLY - Fabrication of materials, equipment or component, to special customized design to extent indicated including delivery to Site, assisting in form of supervision to those Section(s) installing materials, equipment or component. Term does not include installation of item either temporary or final.
c) INSTALL - Placement of materials, equipment, or components, including receiving, unloading, transporting, storage, uncrating and installing, and performance of such testing and finish work as is compatible with degree of installation specified complete ready for use.
d) PROVIDE - To Supply and Install, compete and in place, including accessories, finishes, tests and services as required to render item so specified

complete ready for use.

e) COMMISSION - Startup and initial operation of equipment as required and/or as specified in respective Sections, to demonstrate satisfactory operation of components and entire system including calibration of any control instrumentation as required to maintain operations.

.3 Drawings, Lists or Schedules of Items are intended to show scope and arrangement of work. For location of item described refer to such Drawings,
Lists or Schedules unless location stipulated in Specifications.

.4 Wherever words "acceptable", "approved", "reviewed", "satisfactory", "selected", "directed", "designated", "permitted", "inspected", "instructed", "clarification", "required", "report", "submit", "obtain", "consult", "advise", or similar words or phrases are used in Standards or in Contract Documents, it shall be understood that, unless context provides otherwise words "by/to/with/from the Architect shall follow them as applicable.

.5 Related Work', 'Related Divisions', 'Related Sections' etc.: Specification sections provided herein may note and/or itemize specific sections or divisions of related work. This information is provided for general reference only. In all circumstances, the actual scope of related work is to be as shown/required by the scope of work outlined in all of the Contract Documents (including the drawings) and in no way is to be limited to any information, provided, not provided and/or referenced in the Specification documents.

6.1 **TEMPORARY SERVICES**

.1 Refer to Owner's General Conditions.

.2 If necessary the Contractor shall provide, at their expense, the following temporary services for construction purposes from existing terminals, only in locations designated by the Owner:

Power: 110 volt electrical, 230 volt electrical (at available current) for temporary lighting and operation of power tools. Owner will pay for electricity rates. The contractor can use the power at the school, however

.3 The Owner may discontinue such services at any time to serve emergency Owner's requirements and will accept no liability for any damage or delay resulting from such withdrawal of the service.

.4 **Telephone:** Provide and pay for temporary telephone service for use on site.

.5 The General (or Principal) Contractor is responsible for providing temporary services during the contract for all construction purposes.

7.1 TEMPORARY FACILITIES

.1 Temporary Toilet Facilities:

.1 General Contractor shall supply and maintain temporary toilet facilities on-site, **School Washroom Facilities are not to be used by Trades personnel.**

.2 Temporary Enclosures, Bracings, Scaffolding etc.:

.1 Isolate work areas to protect other tenants and workers from injury, private and public property from damage, by providing guards, rails, hoardings, braces, shoring, underpinning, temporary covers, covered passageways, ramps, stairs, warning signs, visual, audible signals, and fire rated exit enclosures.

.2 Provide necessary protection without interfering with free, safe passage and maximum possible use of the premises by other tenants.

.3 Replace, repair or make good damage immediately.

.4 Ensure that no unauthorized personnel are allowed in the work areas.

.5 Erect all scaffolding independent of walls. Construct in a safe, secure and rigid manner. When not in use place in a position as not to hinder other trades or work. Remove promptly when work is complete.

.3 **Temporary Storage**:

.1 A construction storage area will be designated on site for the storage of construction materials. **Interior occupied areas shall not be used for construction storage.**

.2 Provide secure shipping style containers and/or suitable coverings for materials that are to remain dry.

.3 Deliver, store and maintain packaged materials and equipment with manufacturer's seals and labels intact.

.4 Prevent damage, adulteration, and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected materials and equipment from site.

.5 Store and maintain material and equipment in accordance with manufacturer's and supplier's instructions.

.6 Do not load, or permit to be loaded, any part of the work with a weight or a force that will endanger the work.

.4 **Temporary Construction Office:**

.1 General Contractor shall supply and maintain temporary construction office on-site if they deem necessary, **School interior areas shall not be used for construction office**.

8.1 HEATING AND VENTILATION

.1 Pay for temporary heat and ventilation used during construction including cost of installation, fuel, operation, maintenance and removal of equipment. Use of direct-fired heaters discharging waste products into work areas will not be permitted unless prior approval is given by the Owner.

.2 Furnish and install temporary heat and ventilation in enclosed areas as required to:

.1 facilitate progress of work
.2 protect work and products against dampness and cold
.3 prevent moisture condensation on surfaces
.4 provide ambient temperature and humidity levels for storage, installation and curing of materials
.5 provide adequate ventilation to meet health regulations for safe working environment.

9.1 CONSIDERATION FOR OTHER OCCUPANTS

.1 Execute work to cause minimum interference to other occupants and their personal effects.

.2 Take reasonable measures to control noise during operations.

10.1 EXISTING SERVICES

.1 All work associated with existing services shall be done in accordance with applicable codes. Obtain and pay for any required permits or fees.

.2 Temporarily disconnect and remove existing services as may be necessary to gain access to the work. Upon completion, reinstall and re-connect services to original condition.

.3 Re-route any existing services which interfere with the work of this contract. Extend or modify any existing services as necessary to suit new conditions resulting from the work of this contract.

.4 Obtain the Owner's approval prior to making any modifications to the existing services.

.5 Before commencing work, establish location and extent of service lines in area of work and notify Owner of findings.

.6 Where unknown services are encountered, immediately advise Owner and confirm findings in writing.

11.1 FIRE SAFETY REQUIREMENTS

.1 Refer to General Conditions and in addition, comply with the Ontario Fire Code, by:

.1 Shutting off and capping abandoned service lines.

.2 Maintaining and protecting continuing service lines.

.3 Providing fire watches as required.

.4 Management of combustible salvage, waste and rubbish.

.5 Protecting persons and properties.

.6 Maintaining operable fire detection and protection equipment.

.7 Maintaining fire fighters' access.

.8 Providing temporary fire extinguishing equipment.

.9 Maintaining existing and temporary fire exits.

12.1 CONTRACTOR'S USE OF SITE

.1 Limited to areas for work and outside office and storage as directed by the Owner.

.2 Do not unreasonably encumber site with materials or equipment.

.3 Do not obstruct entrances, stairs or fire exits.

.4 Maintain free access route for fire, ambulance and garbage trucks.

.5 The placement of refuse bin will be allowed in an area agreed to with the Owner.

.6 Make good damage to paving, grass, walkways, curbs, trees, planting beds, etc. caused due to the work of this Contract.

.7 No On-Site Parking will be provided by the Owner. Off-Site parking on Municipal Streets must be reviewed and approved by the local Municipality.

.8 Existing millwork, cabinets, countertops, loose or fixed furniture, equipment or other similar permanent surfaces to remain or be relocated shall not be used for construction work surfaces or storage. The general Contractor and or Subcontractor shall provide their own temporary storage and work surfaces.

13.1 CUTTING, FITTING, HOT WORK AND PATCHING

.1 All cutting and patching by General Contractor.

.2 Inspect and locate existing conditions including elements subject to damage or movement.

.3 Obtain the Engineer's and Owner's approval before doing any hot work, cutting, boring or sleeving load bearing members.

.4 Where work connects with existing and where existing work is altered, cut, patch and make good to match existing.

14.1 LAYOUT OF WORK

.1 Be responsible for layout of all parts of the work in accordance with lines, levels, elevations and measurements shown on the drawings. Errors resulting from failure to verify figures or the proper layout of any element of the installation shall be rectified without additional cost.

15.1 STANDARDS

.1 The specification refers to national and international standards, such as CGA, CGSB, CSA, ULC, ASTM, etc. Be familiar and comply with or exceed the requirements of these standards. Failure to comply may result in rejection of the work and the need to replace or repair at no additional cost.

.2 In case of conflict or discrepancy, the more stringent requirements shall apply.

16.1 CODES

.1 Comply with the most recent versions of: The building Code Act, as amended; The Ontario Building Code and all supplements, as amended and all other Regulations and By-Laws of the authorities having jurisdiction an ammendments thereto. All after are referred to 'Code'. Where Code or Contract Documents do not cover a particular requirement then conform to the National Building Code of Canada and all supplements.

.2 In case of conflict or discrepancy, the more stringent requirements shall apply.

17.1 SHOP DRAWINGS, SAMPLES, CONTROL PANELS

.1 Throughout the specifications, requirements are listed for the submission of drawings, samples and control panels or unit materials. The General (or Principal) Contractor is responsible for the submission and receipt of acceptances and approvals to ensure unnecessary work delays.

.2 Adjustments made on shop drawings by the Owner or Owner's Consultant are not intended to change the Contract Price.

18.1 INSPECTION AND TESTING

.1 Make arrangements for, and pay for, required inspections or tests specified or as required by governing authorities.

.2 Submit 2 copies of inspection and test reports promptly to the Owner.

.3 Allow sufficient time and access for the Owner or the Owner's Consultant to inspect the work or analyze test results.

.4 Do not proceed until written approval of inspection or testing is issued by the Owner.

19.1 HEALTH AND SAFETY

.1 Abide by the provisions of all Acts, Regulations pertaining to health and safety including Occupational Health and Safety Act R.S.O. 1986 Chapter 304 and Amendments, Ontario Regulation 214/91 and Amendments, Workplace Hazardous Materials Information System (W.H.M.I.S.) regulation, Ontario Regulation 644/88.

.2 Maintain on site a list of all hazardous materials (as required by WHMIS Regulation) proposed for use on site together with current Material Safety Data Sheet (MSDS). Supply the Owner with a current copy of the list and MSDS sheets.

.3 Label all hazardous materials according to the requirements of WHMIS.

.4 The Contractor shall have written spill response procedures and material on-site to respond to pollutants and contaminants into the natural environment in excess of levels permitted in regulations or to cause or likely to cause an adverse effect.

.5 The Contractor shall post all appropriate job site signs, notices, instructions and safety requirements in English and/or graphic symbols for the duration of the work.

20.1 CO-ORDINATION

.1 Examine requirements of materials, labour and equipment standards for the work of this contract.

.2 Ensure that where the work of one trade is to be built-in or is to be incorporated into or is dependent on the work of another trade, provide material, labour and equipment so as to avoid work delays.

.3 Ensure that installations, individually and collectively fully comply with contract requirements.

.4 The Architect or Engineers may issue additional drawings to help with execution of the work, however these drawings are issued for clarification only and shall have the same meaning and intent as the Contract Documents and shall be included in the Contract Documents.

21.1 SUBSTITUTIONS, OR EQUAL AND APPROVED EQUALS

.1 All Tenders are to be based strictly upon the items and suppliers specified in/on the Contract Documents. Refer to HWDSB General Information Section, 3.15 Substitutions (1,2,3) for Contractor suggested alternate suppliers or materials.

.2 Or Equal, Approved Equal and Substitute alternate suppliers and materials may be approved by the Consultants and Owner after the Contract is awarded but only due to the following circumstances; Suppliers or materials are no longer available or cannot be ordered and/or produced with-in the Owner's timeframes for project completion including but no limited to interim dates for project phases; the proposed alternate supplier and material meets the same quality and performance

standards as specified and will result in a credit amount to the Contract value amounts accepted by the Owner.

.3 The Owner also reserves the right not to accept or allow any substitutions to Suppliers or Products specified in the Contract Documents if they do not meet the Owner's standards of quality, and performance.

22.1 CLEANING AND DISPOSAL

.1 Provide on-site dump containers in location approved by Owner, for collection of waste materials and rubbish.

.2 Maintain premises free from debris and waste material on a daily basis. Remove all waste materials from site. Do not burn or bury materials on site and do not dispose of materials into storm or sanitary sewers.

.3 Dispose of all recyclable waste materials at recycling storage/handling facilities, where such facilities exist within 70 kilometers of site.

.4 Co-ordinate and supervise the completion operations of each trade. Provide a clean-up team to carry out the final clean-up of finished surfaces as required for immediate use after acceptance.

.5 During Final Cleaning of all exposed to view surfaces. Remove all grease, dust, stains, labels, protection materials, fingerprints, from all finished exposed to view surfaces including all glass and mirrors, use cleaning products that are recommended by the manufactures and approved by the owner. Clean all finished flooring according to manufacturer's instruction. Clean and seal all rubber cove base material. Clean all light fixtures, reflectors and lenses complete. Broom clean and power wash, if necessary all existing exterior paved surfaces and rake clean all other surfaces of the grounds effected by the work operations. Remove all debris and surplus materials from concealed accessible spaces. Replace any broken or scratched glass or mirrors. Repair any new damaged quartz surfaces. Replace with new final filters all mechanical equipment operated during construction. Clean all work with appropriate apparatus and cleaning materials in accordance with applicable specification sections and manufacturer's recommendations. Upon completion of final cleaning, remove all equipment, tools, materials and debris from building and site ready for occupancy by Owner.

23.1 AS-BUILT DRAWINGS AND CLOSEOUT DOCUMENTS

.1 The Contractor shall have on-site (2) sets of drawings for recording progressive recording of any items deviating from the drawings, including but not limited to change orders, site instructions, hidden or unknown conditions, underground utility locations, field changes in dimensions and details, locations of existing structural, mechanical and electrical building systems and related components not otherwise shown on drawings. etc. not otherwise shown on the drawings. These changes shall be recorded in red ink or pencil and upon completion shall reflect 'as-built conditions.

.2 At the completion of the work and before final acceptance the General Contractor shall transfer all as-built on-site hand marked up information and supply Architectural, Structural, Mechanical and Electrical as-built drawings of the work in the latest autocad format. Digital record autocad files will be supplied to the General Contractor by the Consultants for purposes of recording as-built information. At no cost to the Consultants or Owner.

.3 Some trades must maintain records and provide as-built, operating and maintenance information for 'as-built' drawings, digital files, operating and maintenance manuals. Throughout the progress of the work, ensure that these are properly recorded. Assemble and forward the required information, timed to prevent delay in final acceptance.

.4 Submit a set of as- built drawings to the Consultants for review. Make any necessary changes and then submit (2) sets of drawings and (1) digital autocad files on USB Drive or on downloadable format for presentation to the Owner.

.5 Submit (1) digital files on USB Drive as well as (1) PDF copy and (1) copy of Operating and Maintenance documents in 3 ring letter size loose leaf vinyl hard covered binders, with Title sheet labeled 'Operating and Maintenance Data Manual' Organize into tabbed sections parallel to project specification layout for presentation to the Owner. All information to be neatly typed in English. Include but not limited to the following: Any equipment which includes an extended warranty will be listed in a separate section at the beginning of the manual, clearly labelled and including the vendor contact information, description of the equipment or material and the warranty period. Maintenance instructions for finished surface and material; copy of hardware schedule, paint colour formulas, and interior and exterior colour and finish schedules; description, operation, and maintenance instructions all equipment and systems, including complete list of equipment parts. Indicate name plate information such as; make, model, serial number, size and capacity etc.; names, addresses and phone numbers of Sub-Contractors and Suppliers. Also refer to Owner's Front End Documents.

.6 The General Contractor, Mechanical Contractor and Electrical Contractor, shall each note a $2,500.00 hold back amount in their progress draws to cover final submission of all as-built drawings, Operation and Maintenance Manuals. Holdback values will be released upon final Consultant review and approval of documents for presentation to the Owner.

.7 See section below for Guarantees and Warranties

24.1 **CONSTRUCTION MEETINGS AND MINUTES**

.1 The General Contractor shall conduct all construction meetings on a bi-weekly basis or as determined by the Consultant and shall record and distribute all minutes of those meetings in a timely manner no longer than 72 hours after the meeting. Up to date construction time schedules shall be presented at the beginning of the work and on a monthly basis after.

25.1 ALLOWANCES

.1 A Cash Allowance of $5,000.00 to cover but not limited to: concrete testing, compaction testing, and signage shall be included in the tender pricing.

.2 Expend Cash Allowances only as directed and authorized by the Architect and confirm in writing. Supply detailed and itemized costs for all Allowances in writing for the Architect's review and approval prior to proceeding with the work.

.3 Unexpended amount(s) of cash allowances may be reallocated to other cash allowances at the sole discretion of the Architect.

.4 Refer to Owner's General Conditions for applicable Overhead and Profit mark-up. Note Overhead and Profit mark-up is not allowed on the carried cash allowance, however if the cash allowance expenditure exceeds the carried sum then Overhead and Profit will be allowed on the amount(s) over.

26.1 GUARANTEES, WARRANTIES AND BONDS

.1 Expedite the preparation and submission of warranties, particularly extended period warranties, as specified.

.2 Provide warranties that are fully executed and notarized.

.3 Include the following: Name and Address of project(s): Guarantee and Warranty commencement date (certificate or report of final Completion); duration of Guarantee and Warranty; clear indication and description of what is being covered and what remedial action will be taken if Guarantee and/or Warranty needs to be invoked by Owner: and signage and seal of General Contractor.

.4 This information shall be included with-in the Closeout Documents.

-End-

2090 Shirley Drive Kitchener Ontario N2B 0A3
Phone: (519) 578.1000 Toll Free: (800) 265.8959 Fax: (519) 578.3262

Schedule of Finish Hardware

ARCHITECT/DESIGNER: RICHARD G. BUTTERWORTH ARCHITECT INC.
127 JUDITH CRESCENT
ANCASTER ON L9G 1L3
PHONE - 905.304.0241
FAX -

CONTRACTOR:

PHONE -
FAX -

PROJECT: FRANK PANABAKER ELEMENTARY NORTH CAMPUS RENOVATION
168 HURON STREET
ANCASTER ON
7974

PROJECT CONSULTANT: MICHAEL MOORE

PREPARED: February 03, 2026

REVISED: February 03, 2026 .

Scan to check out our website

www.knells.ca

DOOR INDEX

Mark	Heading #	Mark	Heading #	Mark	Heading #
D1	1				
D2	2				
D3	2				
T1	T1				

KNELL'S DOOR & HARDWARE

2090 SHIRLEY DRIVE

KITCHENER ON N2B 0A3

Tel: 519-578-1000 Fax: 519-578-3262

FRANK PANABAKER ELEMENTARY
NORTH CAMPUS RENOVATION

Control No.7974

7974

Hardware Finishes

Finish	Description
626	US26D-SATIN CHROMIUM (BRASS)
630	SATIN STAINLESS STEEL
689	POWDER COAT, ALUMINUM
C26D	SATIN CHROMIUM
C32D	STAINLESS STEEL, SATIN

HARDWARE SCHEDULE - CODE # 7974

FRANK PANABAKER ELEMENTARY NORTH CAMPUS RENOVATION

168 HURON STREET

Heading # 1

1 SGL DOOR D1 VESTIBULE TO B/F WASHROOM — 90º — RH

3-0 x 7-0 x 1 3/4 HMD Door/ HMF Frame — 60 MIN Door/60 MIN Frame

3	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4	626	IVE
1	CYLINDRICAL LOCK WITH THRU BOLTS	ND80TD X RHO X 13-247 X 10-025 X ICA X 50-231	626	SCH
1	CYLINDER CORE	23-030 X C124 X EVEREST-S X GMK	626	SCH
1	ELECTRIC STRIKE	1600CLB-12/24D-630	630	ES-CD
1	AUTO OPERATOR	7900 SERIES UNIVERSAL WASHROOM KIT WITH EMERGENCY CALL STATION	AL	HOR
1	KICK PLATE	GSH 80A X 12 X 34.5	C32D	GAL
1	FLOOR STOP	GSH 209	C26D	GAL
1	POWER SUPPLY	AQD1-1R		SEC

120 VAC TO DOOR OPERATOR AND POWER SUPPLY BY DIV 16. LOW VOLTAGE WIRING TO ELECTTRIC STRIKE, PUSH BUTTONS AND ANNUCIATOR BY DIV 16.

Heading # 2

1 SGL DOOR D2 VESTIBULE TO STAFF WASHROOM — 90º — RH

1 SGL DOOR D3 VESTIBULE TO STAFF WASHROOM — 90º — LH

3-0 x 7-0 x 1 3/4 HMD Door/ HMF Frame — 60 MIN Door/60 MIN Frame

6	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4	626	IVE
2	CYLINDRICAL LOCK WITH THRU BOLTS	ND80TD X RHO X 13-247 X 10-025 X ICA X 50-231	626	SCH
2	CYLINDRICAL DEAD LOCK	B672 X 12-288 X 10-094 X IS-LOC X OS-OCC	626	SCH
2	CLOSER	4040XP.RWPA.689.SRT	689	LCN
2	KICK PLATE	GSH 80A X 12 X 34.5	C32D	GAL
2	FLOOR STOP	GSH 209	C26D	GAL

Heading # T1

1 T1 TEACHER CLOSET — º

x x Door/ Frame — NON-RTD Door/NON-RTD Frame

2	CABINET LOCK	CL777T	626	SCH

BALANCE OF HARDWARER BY MILLWORK SUPPLIER

Appendix A – Construction School Specific Information Sheet Sample

In addition to the terms and conditions of the Contract Documents, the Contractor shall follow the protocols of the Construction Site Specific Information Sheet, sample provided below.
A completed version of this document, with site specific content, will be provided to the Contractor at the pre-construction meeting.

HWDSB

Capital Projects
Facility Services

Construction School Specific Information Sheet

1. School Information:

School Name:	Insert School Name
Bell Times	
Morning (School Entry)**:**	0:00 AM
Afternoon (School Dismissal):	0:00 PM
Aftercare Program Dismissal:	6:00 PM
Caretaking Phone Number:	000-000-0000
***After-Hours Emergency Number:**	905-667-3079
****Caretaking Hours**	
September to June	6:00 AM – 10:00 PM
December Holiday Break	6:00 AM – 2:00 PM
March Break	6:00 AM – 2:00 PM
July to August	6:00 AM – 2:00 PM
Saturday / Sunday	CLOSED
Account Code:	HP0000
Security Panel Code:	0000

*Please call the After-Hours Emergency Number noted above if issues arise outside of Caretaking Hours. These would include unanticipated interruption of services, issues with building or room access, fire alarm or security concerns, etc.

**Caretaker hours are not guaranteed. Please confirm with the HWDSB project supervisor prior to any work taking place, and then on a weekly basis throughout the duration of the project.

2. School Entry for afterhours, school holidays or closures:

Please follow these steps upon entry to the building outside of caretaker hours and on school holidays or closures:

1. Call API Alarm Inc. at 1-877-787-5237 and notify them in advance of the day(s) and time(s) that access to the building will be required. They will require the HP code noted above.
2. Disarm the security panel when arriving.
3. Arm the security panel when leaving.
4. Call API to verify that the building is armed and secure.

Failure to follow this procedure outside of caretaker hours and on school holidays or closures will result in an automatic dispatch of a security guard to the building to verify who has entered/exited the building. Security costs associated with the dispatch of a security guard for failing to follow the procedure will be expensed to the contractor responsible for the incident.

3. Protocol for Work Impacting Fire Alarm System or Devices

The contractor is to follow this procedure when the fire alarm system is impacted.

A. References and Definitions:

Fire Alarm Control and Testing Service Provider: Hamilton Fire Control

Fire Alarm and Security System Monitoring Service Provider: API Alarm Inc.

Fire Watch: An hourly patrol of areas that are not protected/monitored by the fire alarm system. These include but are not limited to, a disconnected device, a covered device, a bypassed device, or device in trouble. The general contractor is responsible for fire watch in all construction areas. Caretaking staff are responsible for fire watch in all other areas of the school. Fire watch is to be recorded in a Fire Watch Log.

Fire Watch Log: The general contractor is to document and maintain a written log confirming fire watch has been conducted hourly. This log is to remain on site for the duration of the project. This written log is maintained separate from the caretaking fire watch log. The caretaking log is digitally recorded within the Boards asset management system (eBase).

B. Mandatory Pre-Construction Site Meeting with Hamilton Fire Control

1. Contractor to request a meeting prior to mobilization with Michael Fleet from Hamilton Fire Control (HFC), the project supervisor from HWDSB, the facility operation supervisor from HWDSB and the head caretaker to review any work that will affect the fire alarm system. This can be coordinated by the project supervisor upon request.

   Contact: Michael Fleet - Hamilton Fire Control
   Phone: (905) 527-7042
   Email: michael@hamiltonfirecontrol.ca

2. Contractor to minute the meeting and submit to the project supervisor and Michael Fleet from HFC for review within 48 hours of the site-walk-through.

C. Mandatory Construction Protocol if the Fire Alarm System is Impacted

1. Contractor to follow procedures discussed and documented from the pre-construction site meeting with Hamilton Fire Control.

2. If devices are impacted during occupied hours:
   - Per the Fire Safety Plan, contractor to notify API that they'll be on Fire Watch (in the area of the impacted devices only). API will not take any action; the notification is for information purposes only.
   - Contractor to either take the device offline or protect/cover it. Fire watch (in the area of the impacted device only) is required in either of these scenarios. If the alarm goes off during work, all occupants, including contractors, are to evacuate the building and the fire department will be dispatched.

   If hot work is taking place, prior to the above-noted steps:
   - Contractors are required to advise HWDSB at least 24 hours before any hot work is scheduled to take place.
   - The contractor is required to provide a hot work permit to HWDSB at the same time.

3. If devices are impacted outside of occupied hours, and the contractor is the only party in the building:
   - The same protocol above is to be followed.

4. If the system or specific devices will not be operational while the school is completely vacant (i.e. overnight or on a weekend when no Work is taking place):
   - No action required.

The system is not to be bypassed (device(s) or full system). The system is NOT to be put on test. The only time the system will be put on test and the school will be on Fire Watch is if the system is being tested.

In the event a fire alarm device is activated, all occupants of the school, including contractors, must evacuate the school. The fire department will be dispatched. The contractor will be responsible for all fire department costs resulting from construction.

4. Please follow these steps for planning any service (electrical, gas, water) shutdowns:

A. Internal Localized System/Service Shutdowns:

1. Localized shutdowns **require minimum 3 days' notice** to HWDSB project supervisor for coordination with the school facility and staff.
2. Shutdowns must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.
3. If a shutdown will impact the security system, the contractor shall contact API Alarm Inc. at 1-877-787-5237 and notify them in advance of the day(s) and time(s) of the shutdown.
4. If a shutdown impacts the fire alarm system, the contractor shall follow the Fire Alarm Bypass Protocol, section 4 above.
5. If required, the contractor is to coordinate with Board vendor/s to be on site to ensure boilers, roof top units, heat pumps, etc. are functioning properly after service disruption has concluded.

    - Chamberlain Building Services Inc - info@chbs.ca, 905-664-1914 or
    - Union Boiler Company Limited - info@unionboiler.com, 905-528-7977

6. Process will vary based on services shutdown and ability to localize shutdown.

B. Complete School System/Service Shutdowns:

1. Complete building shutdowns **require minimum 5 days' notice** to HWDSB project supervisor.
2. Shutdowns must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.
3. Contractor to contact API Alarm Inc. at 1-877-787-5237 and notify them in advance of the day(s) and time(s) of shutdown.
4. During the shutdown, the contractor is responsible for following Fire Alarm Bypass Protocol, section 4 above.
5. The contractor is to coordinate with Board vendor/s to be on site to ensure boilers, roof top units, heat pumps, etc. are functioning properly after service disruption has concluded.

    - Chamberlain Building Services Inc - info@chbs.ca, 905-664-1914 or
    - Union Boiler Company Limited - info@unionboiler.com, 905-528-7977

6. HWDSB project supervisor will coordinate with other HWDSB departments to ensure all systems (IIT, security, communications) are up and running after service disruption has concluded.
7. If required, HWDSB project supervisor will coordinate with City of Hamilton staff if site has shared facilities such as recreation centre, community centre, pool or library, etc.
8. Process will vary based on service shutdown.

C. Heating and Cooling System Shutdowns:

1. Heating and cooling system shutdowns **require minimum 5 days' notice** to HWDSB project supervisor
2. Shutdowns must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.
3. The contractor is to coordinate with Board vendor/s to be on site to ensure boilers, roof top units, heat pumps, etc. are functioning properly after service disruption has concluded.

    - Chamberlain Building Services Inc - info@chbs.ca, 905-664-1914 or
    - Union Boiler Company Limited - info@unionboiler.com, 905-528-7977

4. If the boiler system is drained, the contractor upon refilling the system, is responsible for coordinating Board approved chemical treatment vendor to treat water.

    - Aquarian Chemicals Inc - info@aquarianchemicals.com, 905-825-3711

5. Process will vary based on services shutdown and ability to localize shutdown.

D. Asbestos Abatement and Designated Substance Related Work:

1. Designated substance related work **requires minimum 5 days' notice** to HWDSB project supervisor.
2. Designated substance related work in occupied areas must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.

February 10, 2026

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

Re: Hazardous Building Materials Assessment (Preconstruction)
Washroom Renovations
Frank Panabaker Elementary School North Campus, 168 Huron Avenue, Ancaster, ON
Pinchin File: 352293.010

HWDSB (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment of Frank Panabaker Elementary School North Campus located at 168 Huron Avenue, Ancaster, ON.

Pinchin performed the assessment on December 22, 2025. The assessor was unaccompanied during the assessment. The assessed area was vacant 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 renovations to the washrooms and coat rooms of the school.

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

- Parging Cement (pipe insulation)
- Caulking
- Thin-set (Presumed)
- Lead is present in paints and coatings.
- Crystalline silica is present in concrete and other materials such as masonry, ceramic tiles, and plaster.
- Mercury vapour is present in lamp tubes.
- No PCB-containing items were identified.

- No mould or water damage was identified.

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.

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 renovations 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 paints identified as having low levels of lead (i.e., equal to or above 0.009% (90 mg/kg) but less than or equal to the EACC guideline of 0.1% (1,000 mg/kg) for lead-containing paints) special precautions are not recommended unless aggressive disturbance (grinding, blasting, torching) is planned.

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 or separate liquid mercury from components. 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
Floors Above Grade	1
Floors Below Grade	0
Total Area (square feet)	The assessed area is 4,185 square feet.
Year of Construction	1959
Additions	None
Structure	Concrete, steel
Exterior Cladding	Masonry
HVAC	Radiant heating
Roof	Not Assessed
Flooring	Ceramic tile, vinyl floor tile, concrete
Wall and Ceiling Finishes	Concrete block, wood, ceiling tiles

3.2 Existing Reports

3.2.1 Review of Previous Reports

Pinchin reviewed the following reports and included relevant results as appropriate:

- "Frank Panabaker North (Fesseden Campus) School Asbestos Inventory", May 2025. Prepared by The Hamilton-Wentworth District School Board.

4.0 FINDINGS

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

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	Confirmed Hazard	Total Quantity Present	Material Specific Notes
S0001 ABC	**Piping | Parging Cement**	**Chrysotile**	**Yes**	**74 EA**	**1**
S0002 ABC	Floor | Thin-set	None Detected	No	1,285 SF	
S0003 ABC	Other | Caulking | White	None Detected	No	90 LF	
S0004 ABC	**Other | Caulking | Grey**	**Chrysotile**	**Yes**	**365 LF**	**2**
S0005 ABC	Other | Caulking | White	None Detected	No	20 LF	
S0006 ABCD	Floor | Vinyl Floor Tile and Mastic | 12x12 white with pink and blue fleck	None Detected	No	625 SF	
S0007 ABCDE FG	Wall | Paint | On block	None Detected	No	12,410 SF	
S0008 ABC	Floor | Vinyl Floor Tile and Mastic | 12x12 grey with white and black fleck	None Detected	No	110 SF	
S0009 ABC	Other | Caulking | White on urinal	None Detected	No	80 LF	
S0010 ABC	Floor | Thin-set	None Detected	No	510 SF	
S0011	Floor | Caulking	None Detected	No	30 LF	

ABC					
V9500	**Other | Thin-set**	**Presumed Asbestos**	**Yes**	**2 SF**	**3**
V0000	Ceiling | Ceiling Tiles (lay-in)	None	No	560 SF	1990's/2000's Date stamp

Material Specific Notes:

1. Pipes insulated with asbestos-containing insulations may be present in inaccessible spaces such as above solid ceilings, in chases, in column enclosures and within shafts.
2. Caulking is present around interior door frames.
3. Thin-set behind ceramic toiler paper holder is presumed to contain asbestos.

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 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
- Fire doors
- Mirror mastic
- Moulded plastic components (laboratory bench tops)
- Refractory materials and insulations in boilers, incinerators, and stacks
- Mechanical packing, ropes, and gaskets
- Vermiculite
- Paper products

- Vibration dampers on HVAC equipment
- 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	Confirmed Hazard	Total Quantity Present	Material Specific Notes
L0001	Wall | Concrete (precast) | Grey on block	0.00079%	No	1000 SF	
L0002	Structure | Metal | Red on beam	0.00086%	No	200 SF	
L0003	**Wall | Concrete (precast) | Cream and blue on block**	**0.030%**	**Yes**	**1350 SF**	
L0004	Wall | Concrete (precast) | Grey on block	0.00030%	No	100 SF	
L0005	Other | Metal | grey on door and frame	0.00072%	No	345 SF	
L0006	**Wall | Concrete (precast) | White on block**	**0.030%**	**Yes**	**2520 SF**	
L0007	Wall | Concrete (precast) | White on block	0.00021%	No	2520 SF	
L0008	**Wall | Concrete (precast) | Blue on block**	**0.062%**	**Yes**	**100 SF**	

General Notes:

Results less than or equal to 0.1% (1,000 mg/kg), but equal to or greater than 0.009% (90 mg/kg), are considered low-level lead paints or surface coatings in accordance with the EACC guideline.

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

Lead products were not found during the assessment.

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
- Glazing on ceramic tiles

4.3 Silica

Crystalline silica is a presumed component of the following materials:

- Poured and pre-cast concrete
- Masonry and mortar
- Ceramic tiles and grout

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	Total Quantity Present	Material Specific Notes
V9500	Mercury Vapour Lamp	Yes	150 EA	

General Notes:

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

4.5 Polychlorinated Biphenyls

PCB-containing materials 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
- Exterior caulking

4.6 Mould and Water Damage

Visible mould growth and water damage was not found during the assessment.

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 and its finishes.

The assessment did not include demolition of wall and ceiling finishes (drywall or plaster) to view concealed conditions at representative areas as permitted by the current building use. Limited destructive testing of flooring was conducted where possible (under ceramic tiles, carpets, or multiple layers of flooring). 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:

Ontario

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. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 362 as amended.
7. Silica on Construction Projects, Ministry of Labour Guidance Document.
8. Alert – Mould in Workplace Buildings, Ontario Ministry of Labour.

All jurisdictions

1. PCB Regulations, SOR/2008-273, Canadian Environmental Protection Act.
2. Surface Coating Materials Regulations, SOR/2016-193, Canada Consumer Product Safety Act.
3. Consolidated Transportation of Dangerous Goods Regulations, including Amendment SOR/2019-101, Transportation of Dangerous Goods Act.
4. Mould Guidelines for the Canadian Construction Industry, Standard Construction Document CCA 82 – 2004 (Revised 2018), Canadian Construction Association.
5. Ozone-depleting Substances and Halocarbon Alternatives Regulations, SOR/2016-137.

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

The data presented in the appendices is prepared by Pinchin's Hazardous Materials Inventory System (HMIS). The information can be made available for your real-time access through our secure web-based platform. Please contact your Pinchin representative to discuss HMIS solutions for management of your asbestos (and other hazardous materials) inventory.

Contact the Project Manager, Jessica Cozzitorto at 905.577.6206 or jcozzitorto@pinchin.com should you have any questions.

Sincerely,

Pinchin Ltd.

Prepared by:

Ben Weir
Project Technologist

Project Managed by:

Jessica Cozzitorto, C. Tech.
Team Leader

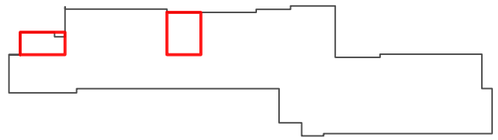
Reviewed by:

Damian Palus, C.E.T.
Operations Manager

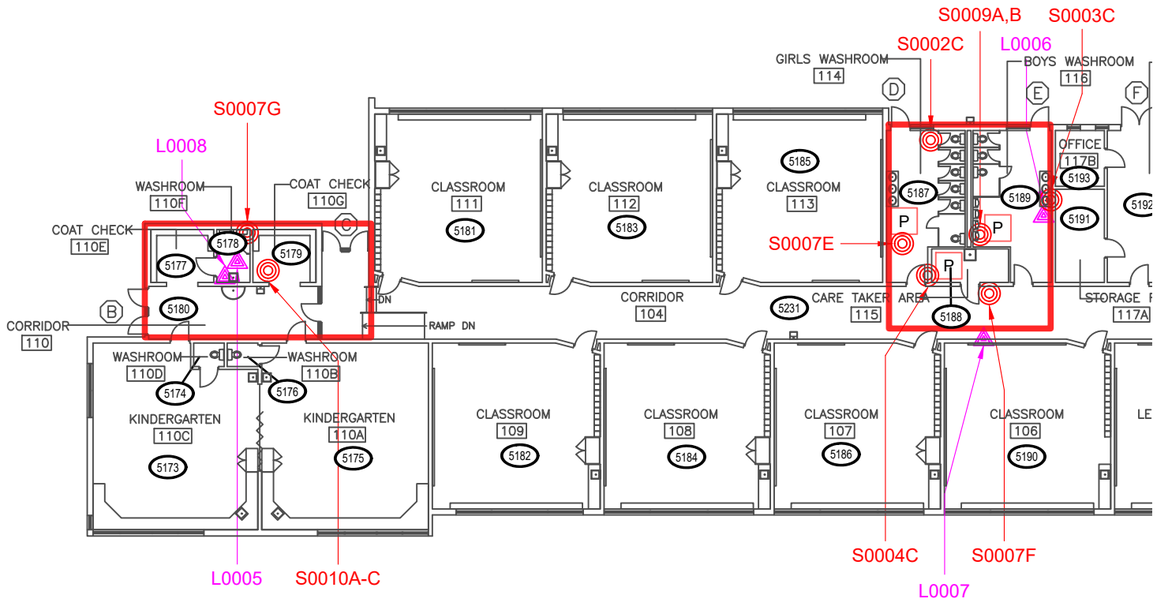
Encl:

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

APPENDIX I
Drawings



KEY PLAN



N

LEGEND

- PINCHIN LOCATION NUMBER
- ASBESTOS BULK SAMPLE
- LEAD BULK SAMPLE
- SURVEY BOUNDARY/ASSESSED AREA

ASBESTOS-CONTAINING MATERIALS:

- P PIPE INSULATION

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

- CAULKING
- THINSET (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.

PINCHIN

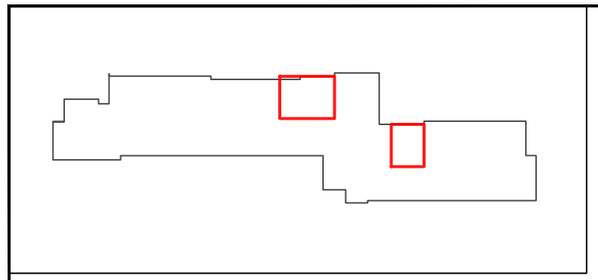
PROJECT NAME:
HAZARDOUS BUILDING MATERIALS ASSESSMENT

CLIENT NAME:
HAMILTON-WENTWORTH DISTRICT SCHOOL BOARD

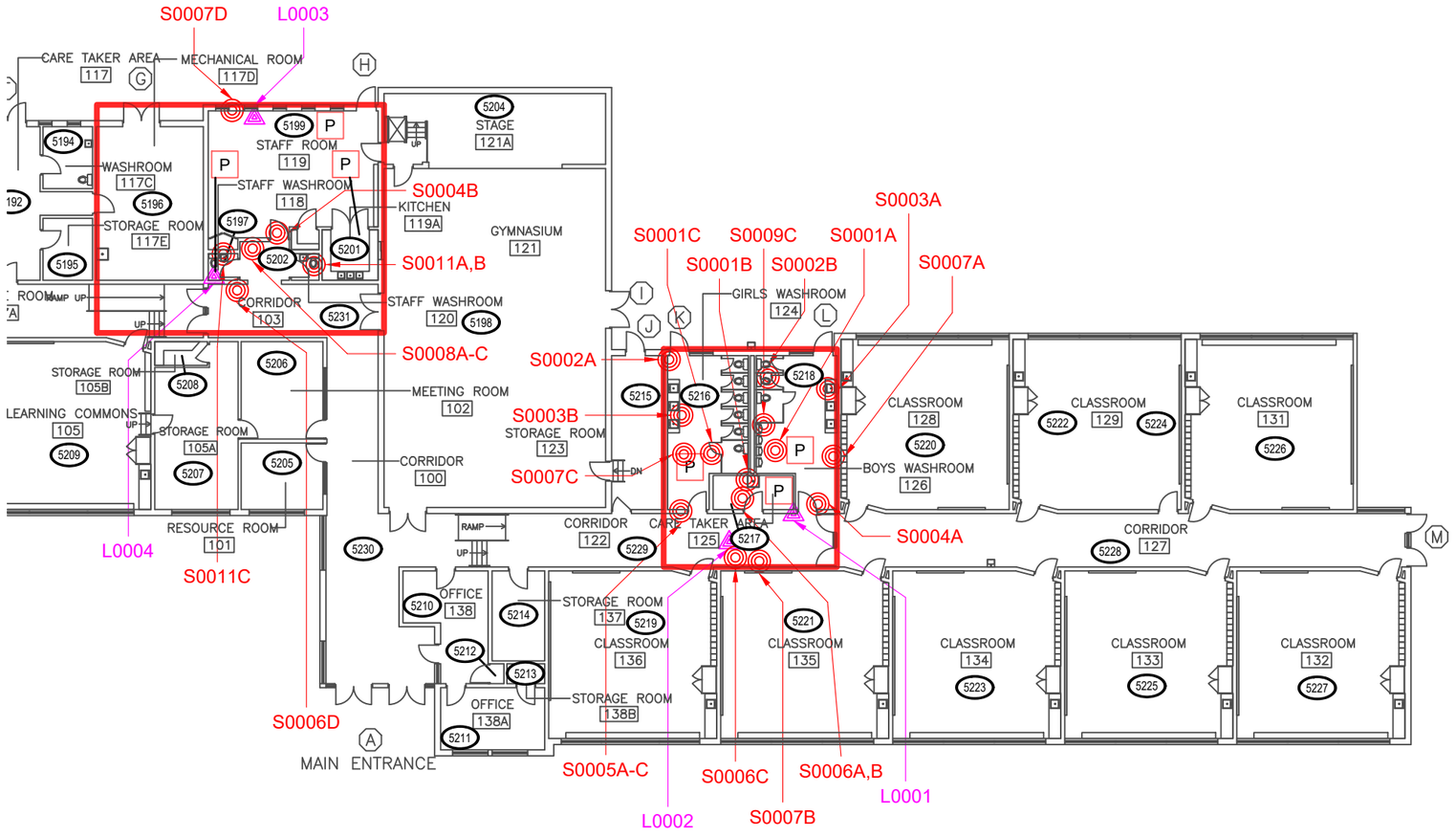
PROJECT LOCATION:
FRANK PANABAKER NORTH ES, 168 HURON AVENUE, ANCASTER, ON, CANADA

FIGURE NAME:
GROUND FLOOR

PROJECT NUMBER:	SCALE:
0352293.010	NOT TO SCALE
DRAWN BY:	REVIEWED BY:
ML	
DATE:	FIGURE NUMBER:
FEBRUARY 2026	1 OF 2



KEY PLAN



N

LEGEND

- PINCHIN LOCATION NUMBER
- ASBESTOS BULK SAMPLE
- LEAD BULK SAMPLE
- SURVEY BOUNDARY/ASSESSED AREA

ASBESTOS-CONTAINING MATERIALS:

- P PIPE INSULATION

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

- CAULKING
- THINSET (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.

PINCHIN

PROJECT NAME:
HAZARDOUS BUILDING MATERIALS ASSESSMENT

CLIENT NAME:
HAMILTON-WENTWORTH DISTRICT SCHOOL BOARD

PROJECT LOCATION:
FRANK PANABAKER NORTH ES, 168 HURON AVENUE, ANCASTER, ON, CANADA

FIGURE NAME:
GROUND FLOOR

PROJECT NUMBER:	SCALE:
0352293.010	NOT TO SCALE
DRAWN BY:	REVIEWED BY:
ML	
DATE:	FIGURE NUMBER:
FEBRUARY 2026	1 OF 2

APPENDIX II-A
Asbestos Analytical Certificates

Your Project #: 352293.010
Your C.O.C. #: NA

Attention: Jessica Cozzitorto

Pinchin Ltd
2360 Meadowpine Blvd
Unit # 2
Mississauga, ON
CANADA L5N 6S2

Report Date: 2026/01/05
Report #: R8677676
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C5G2577
Received: 2025/12/29, 14:18

Sample Matrix: Bulk
Samples Received: 38

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Asbestos by PLM - 0.5 RDL (1)	38	N/A	2026/01/05	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.

This report may not be reproduced, except in full, without the written approval of Bureau Veritas. This report may not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any other agency of the U.S. Government.

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 #: 352293.010
Your C.O.C. #: NA

Attention: Jessica Cozzitorto

Pinchin Ltd
2360 Meadowpine Blvd
Unit # 2
Mississauga, ON
CANADA L5N 6S2

Report Date: 2026/01/05
Report #: R8677676
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C5G2577
Received: 2025/12/29, 14:18

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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0001A PIPING,PARGING CEMENT,LOC:5218,BOY'S WASHROOM

Bureau Veritas ID: AYSU00 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos		Other Fibres	Particulate
Layer 1	100	Homogeneous grey parging cement	**Chrysotile**	40%		Non-Fibrous

S0001B PIPING,PARGING CEMENT,LOC:5217,CLOSET

Bureau Veritas ID: AYSU01 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1			N/A		
	Comment:	Not Analyzed - Positive Stop			

S0001C PIPING,PARGING CEMENT,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU02 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1			N/A		
	Comment:	Not Analyzed - Positive Stop			

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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0002A FLOOR,THIN-SET,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU03 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

S0002B FLOOR,THIN-SET,LOC:5218,BOY'S WASHROOM

Bureau Veritas ID: AYSU04 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

S0002C FLOOR,THIN-SET,LOC:5187,GIRLS WASHROOM

Bureau Veritas ID: AYSU05 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey thinset	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0003A CAULKING,WHITE,LOC:5218,BOY'S WASHROOM

Bureau Veritas ID: AYSU06 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	Not Detected		Non-Fibrous

S0003B CAULKING,WHITE,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU07 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	Not Detected		Non-Fibrous

S0003C CAULKING,WHITE ON SINK,LOC:5189,BOYS WASHROOM

Bureau Veritas ID: AYSU08 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0004A DOOR FRAME,CAULKING,GREY,LOC:5218,BOY'S WASHROOM

Bureau Veritas ID: AYSU09 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos		Other Fibres	Particulate
Layer 1	100	Homogeneous grey caulking	**Chrysotile**	1%		Non-Fibrous

S0004B DOOR FRAME,CAULKING,GREY,LOC:5199,STAFF ROOM

Bureau Veritas ID: AYSU10 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1			N/A		
	Comment:	Not Analyzed - Positive Stop			

S0004C DOOR FRAME,CAULKING,GREY,LOC:5187,GIRLS WASHROOM

Bureau Veritas ID: AYSU11 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1			N/A		
	Comment:	Not Analyzed - Positive Stop			

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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0005A DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU12 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	Not Detected		Non-Fibrous

S0005B DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU13 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	Not Detected		Non-Fibrous

S0005C DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU14 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0006A FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 WHITE WITH PINK AND BLUE FLECK,LOC:5217,CLOSET

Bureau Veritas ID: AYSU15 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous white vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous beige mastic	Not Detected		Non-Fibrous

S0006B FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 WHITE WITH PINK AND BLUE FLECK,LOC:5217,CLOSET

Bureau Veritas ID: AYSU16 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous white vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous beige 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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0006C FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 BLUE,LOC:5229,CORRIDOR

Bureau Veritas ID: AYSU17 Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous blue vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous black mastic	Not Detected		Non-Fibrous

S0006D FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 YELLOW,LOC:5231,CORRIDOR

Bureau Veritas ID: AYSU18 Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous yellow vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous black 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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0007A WALL,PAINT,ON BLOCK,LOC:5218,BOY'S WASHROOM

Bureau Veritas ID: AYSU19 | Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous white/beige paint/block filler	Not Detected		Non-Fibrous

S0007B WALL,PAINT,ON BLOCK,LOC:5229,CORRIDOR

Bureau Veritas ID: AYSU20 | Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous white paint/block filler	Not Detected		Non-Fibrous

S0007C WALL,PAINT,ON BLOCK,LOC:5216,GIRLS WASHROOM

Bureau Veritas ID: AYSU21 | Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Non-homogeneous white/beige paint/block filler	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0007D WALL,PAINT,ON BLOCK,LOC:5199,STAFF ROOM

Bureau Veritas ID: AYSU22 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white paint	Not Detected		Non-Fibrous

S0007E WALL,PAINT,ON BLOCK,LOC:5187,GIRLS WASHROOM

Bureau Veritas ID: AYSU23 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white paint	Not Detected		Non-Fibrous

S0007F WALL,PAINT,ON BLOCK,LOC:5231,CORRIDOR

Bureau Veritas ID: AYSU24 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white paint	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0007G WALL,PAINT,ON BLOCK,LOC:5178,WASHROOM

Bureau Veritas ID: AYSU25 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white paint	Not Detected		Non-Fibrous

S0008A FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 GREY WITH WHITE AND BLACK FLECK,LOC:5202,CORRIDOR

Bureau Veritas ID: AYSU26 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous grey vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous black 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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0008B FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 GREY WITH WHITE AND BLACK FLECK,LOC:5202,CORRIDOR

Bureau Veritas ID: AYSU27 Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous grey vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous black mastic	Not Detected		Non-Fibrous

S0008C FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 GREY WITH WHITE AND BLACK FLECK,LOC:5202,CORRIDOR

Bureau Veritas ID: AYSU28 Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	95	Homogeneous grey vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	5	Homogeneous black 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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0009A CAULKING,WHITE ON URINAL,LOC:5189,BOYS WASHROOM

Bureau Veritas ID: AYSU29 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	Not Detected		Non-Fibrous

S0009B CAULKING,WHITE ON URINAL,LOC:5189,BOYS WASHROOM

Bureau Veritas ID: AYSU30 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	Not Detected		Non-Fibrous

S0009C CAULKING,WHITE ON URINAL,LOC:5218,BOY'S WASHROOM

Bureau Veritas ID: AYSU31 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous white caulking	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0010A FLOOR,THIN-SET,LOC:5179,COAT ROOM

Bureau Veritas ID: AYSU32 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

S0010B FLOOR,THIN-SET,LOC:5179,COAT ROOM

Bureau Veritas ID: AYSU33 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

S0010C FLOOR,THIN-SET,LOC:5179,COAT ROOM

Bureau Veritas ID: AYSU34 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey thinset	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0011A FLOOR,CAULKING,GREY,LOC:5198,STAFF WASHROOM

Bureau Veritas ID: AYSU35 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	50	Homogeneous white caulking	Not Detected		Non-Fibrous
Layer 2	50	Homogeneous clear caulking	Not Detected		Non-Fibrous

S0011B FLOOR,CAULKING,GREY,LOC:5198,STAFF WASHROOM

Bureau Veritas ID: AYSU36 — Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	50	Homogeneous white caulking	Not Detected		Non-Fibrous
Layer 2	50	Homogeneous clear caulking	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 #: C5G2577
Report Date: 2026/01/05

Pinchin Ltd
Client Project #: 352293.010
Sampler Initials: BW

Asbestos Analytical Results

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

S0011C FLOOR,CAULKING,GREY,LOC:5197,STAFF WASHROOM

Bureau Veritas ID: AYSU37 Date Analyzed: 2026/01/05

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	50	Homogeneous white caulking	Not Detected		Non-Fibrous
Layer 2	50	Homogeneous clear caulking	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

TEST SUMMARY

Bureau Veritas ID: AYSU00 **Collected:** 2025/12/24
Sample ID: S0001A PIPING,PARGING CEMENT,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU00 Dup **Collected:** 2025/12/24
Sample ID: S0001A PIPING,PARGING CEMENT,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU01 **Collected:** 2025/12/24
Sample ID: S0001B PIPING,PARGING CEMENT,LOC:5217,CLOSET **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU02 **Collected:** 2025/12/24
Sample ID: S0001C PIPING,PARGING CEMENT,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU03 **Collected:** 2025/12/24
Sample ID: S0002A FLOOR,THIN-SET,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU04 **Collected:** 2025/12/24
Sample ID: S0002B FLOOR,THIN-SET,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU05 **Collected:** 2025/12/24
Sample ID: S0002C FLOOR,THIN-SET,LOC:5187,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

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TEST SUMMARY

Bureau Veritas ID: AYSU06 **Collected:** 2025/12/24
Sample ID: S0003A CAULKING,WHITE,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU07 **Collected:** 2025/12/24
Sample ID: S0003B CAULKING,WHITE,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU08 **Collected:** 2025/12/24
Sample ID: S0003C CAULKING,WHITE ON SINK,LOC:5189,BOYS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU09 **Collected:** 2025/12/24
Sample ID: S0004A DOOR FRAME,CAULKING,GREY,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU10 **Collected:** 2025/12/24
Sample ID: S0004B DOOR FRAME,CAULKING,GREY,LOC:5199,STAFF ROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU11 **Collected:** 2025/12/24
Sample ID: S0004C DOOR FRAME,CAULKING,GREY,LOC:5187,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU12 **Collected:** 2025/12/24
Sample ID: S0005A DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

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TEST SUMMARY

Bureau Veritas ID: AYSU13 **Collected:** 2025/12/24
Sample ID: S0005B DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU14 **Collected:** 2025/12/24
Sample ID: S0005C DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU14 Dup **Collected:** 2025/12/24
Sample ID: S0005C DOOR FRAME,CAULKING,WHITE,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU15 **Collected:** 2025/12/24
Sample ID: S0006A FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 WHITE WITH PINK AND BLUE FLECK,LOC:5217,CLOSET **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU16 **Collected:** 2025/12/24
Sample ID: S0006B FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 WHITE WITH PINK AND BLUE FLECK,LOC:5217,CLOSET **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU17 **Collected:** 2025/12/24
Sample ID: S0006C FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 BLUE,LOC:5229,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU18 **Collected:** 2025/12/24
Sample ID: S0006D FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 YELLOW,LOC:5231,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

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TEST SUMMARY

Bureau Veritas ID: AYSU19 **Collected:** 2025/12/24
Sample ID: S0007A WALL,PAINT,ON BLOCK,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU20 **Collected:** 2025/12/24
Sample ID: S0007B WALL,PAINT,ON BLOCK,LOC:5229,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU21 **Collected:** 2025/12/24
Sample ID: S0007C WALL,PAINT,ON BLOCK,LOC:5216,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU22 **Collected:** 2025/12/24
Sample ID: S0007D WALL,PAINT,ON BLOCK,LOC:5199,STAFF ROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU23 **Collected:** 2025/12/24
Sample ID: S0007E WALL,PAINT,ON BLOCK,LOC:5187,GIRLS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU24 **Collected:** 2025/12/24
Sample ID: S0007F WALL,PAINT,ON BLOCK,LOC:5231,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU24 Dup **Collected:** 2025/12/24
Sample ID: S0007F WALL,PAINT,ON BLOCK,LOC:5231,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

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TEST SUMMARY

Bureau Veritas ID: AYSU25 **Collected:** 2025/12/24
Sample ID: S0007G WALL,PAINT,ON BLOCK,LOC:5178,WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU26 **Collected:** 2025/12/24
Sample ID: S0008A FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 GREY WITH WHITE AND BLACK FLECK,LOC:5202,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU27 **Collected:** 2025/12/24
Sample ID: S0008B FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 GREY WITH WHITE AND BLACK FLECK,LOC:5202,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU28 **Collected:** 2025/12/24
Sample ID: S0008C FLOOR,VINYL FLOOR TILE AND MASTIC,12X12 GREY WITH WHITE AND BLACK FLECK,LOC:5202,CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU29 **Collected:** 2025/12/24
Sample ID: S0009A CAULKING,WHITE ON URINAL,LOC:5189,BOYS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU30 **Collected:** 2025/12/24
Sample ID: S0009B CAULKING,WHITE ON URINAL,LOC:5189,BOYS WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU31 **Collected:** 2025/12/24
Sample ID: S0009C CAULKING,WHITE ON URINAL,LOC:5218,BOY'S WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

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TEST SUMMARY

Bureau Veritas ID: AYSU32 **Collected:** 2025/12/24
Sample ID: S0010A FLOOR,THIN-SET,LOC:5179,COAT ROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU33 **Collected:** 2025/12/24
Sample ID: S0010B FLOOR,THIN-SET,LOC:5179,COAT ROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU34 **Collected:** 2025/12/24
Sample ID: S0010C FLOOR,THIN-SET,LOC:5179,COAT ROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU34 Dup **Collected:** 2025/12/24
Sample ID: S0010C FLOOR,THIN-SET,LOC:5179,COAT ROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU35 **Collected:** 2025/12/24
Sample ID: S0011A FLOOR,CAULKING,GREY,LOC:5198,STAFF WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU36 **Collected:** 2025/12/24
Sample ID: S0011B FLOOR,CAULKING,GREY,LOC:5198,STAFF WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

Bureau Veritas ID: AYSU37 **Collected:** 2025/12/24
Sample ID: S0011C FLOOR,CAULKING,GREY,LOC:5197,STAFF WASHROOM **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	A083185	N/A	2026/01/05	Haseeb Ahmad

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GENERAL COMMENTS

Results relate only to the items tested.

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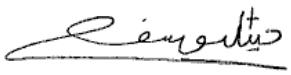
VALIDATION SIGNATURE PAGE

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.

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NONT-2025-12-4583

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

Special Instructions:

Client Name:				**Project Address:**	ON		
Portfolio/Building No:				**Pinchin File:**	352293.010		
Submitted by:	Ben Weir			**Email:**	bweir@pinchin.com		
CC Email:	Jessica Cozzitorto			**CC Email:**	jcozzitorto@pinchin.com		
Date Submitted:	December	24	2025	**Required by:**	January	5	2026
# of Samples:	38			**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 #:				158256/2025112237881755			
To be Completed by Lab Personnel Only:							
Lab Reference #:	DEC 29 2025			**Time:**	24 hour clock		
Received by:				**Date:**	Month	Day	Year
Name(s) of Analyst(s):							

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0001	A	Piping,Parging Cement,Loc:5218,Boy's Washroom
S	0001	B	Piping,Parging Cement,Loc:5217,Closet
S	0001	C	Piping,Parging Cement,Loc:5216,Girls Washroom
S	0002	A	Floor,Thin-set,Loc:5216,Girls Washroom
S	0002	B	Floor,Thin-set,Loc:5218,Boy's Washroom
S	0002	C	Floor,Thin-set,Loc:5187,Girls Washroom

A ANMOLDEEP SINGH
2025/12/29 14:18

CSG2577
2025/12/29 14:18

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0003	A	Caulking,White,Loc:5218,Boy's Washroom
S	0003	B	Caulking,White,Loc:5216,Girls Washroom
S	0003	C	Caulking,White On Sink,Loc:5189,Boys Washroom
S	0004	A	Door Frame,Caulking,Grey,Loc:5218,Boy's Washroom
S	0004	B	Door Frame,Caulking,Grey,Loc:5199,Staff Room
S	0004	C	Door Frame,Caulking,Grey,Loc:5187,Girls Washroom
S	0005	A	Door Frame,Caulking,White,Loc:5216,Girls Washroom
S	0005	B	Door Frame,Caulking,White,Loc:5216,Girls Washroom
S	0005	C	Door Frame,Caulking,White,Loc:5216,Girls Washroom
S	0006	A	Floor,Vinyl Floor Tile And Mastic,12x12 White With Pink And Blue Fleck,Loc:5217,Closet
S	0006	B	Floor,Vinyl Floor Tile And Mastic,12x12 White With Pink And Blue Fleck,Loc:5217,Closet
S	0006	C	Floor,Vinyl Floor Tile And Mastic,12x12 Blue,Loc:5229,Corridor
S	0006	D	Floor,Vinyl Floor Tile And Mastic,12x12 Yellow,Loc:5231,Corridor
S	0007	A	Wall,Paint,On Block,Loc:5218,Boy's Washroom
S	0007	B	Wall,Paint,On Block,Loc:5229,Corridor

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0007	C	Wall,Paint,On Block,Loc:5216,Girls Washroom
S	0007	D	Wall,Paint,On Block,Loc:5199,Staff Room
S	0007	E	Wall,Paint,On Block,Loc:5187,Girls Washroom
S	0007	F	Wall,Paint,On Block,Loc:5231,Corridor
S	0007	G	Wall,Paint,On Block,Loc:5178,Washroom
S	0008	A	Floor,Vinyl Floor Tile And Mastic,12x12 Grey With White And Black Fleck,Loc:5202,Corridor
S	0008	B	Floor,Vinyl Floor Tile And Mastic,12x12 Grey With White And Black Fleck,Loc:5202,Corridor
S	0008	C	Floor,Vinyl Floor Tile And Mastic,12x12 Grey With White And Black Fleck,Loc:5202,Corridor
S	0009	A	Caulking,White On Urinal,Loc:5189,Boys Washroom
S	0009	B	Caulking,White On Urinal,Loc:5189,Boys Washroom
S	0009	C	Caulking,White On Urinal,Loc:5218,Boy's Washroom
S	0010	A	Floor,Thin-set,Loc:5179,Coat Room
S	0010	B	Floor,Thin-set,Loc:5179,Coat Room
S	0010	C	Floor,Thin-set,Loc:5179,Coat Room
S	0011	A	Floor,Caulking,Grey,Loc:5198,Staff Washroom

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	0011	B	Floor,Caulking,Grey,Loc:5198,Staff Washroom
S	0011	C	Floor,Caulking,Grey,Loc:5197,Staff Washroom

APPENDIX II-B
Lead Analytical Certificates

Your Project #: 352293.01
Your C.O.C. #: NA

Attention: Jessica Cozzitorto

Pinchin Ltd
2360 Meadowpine Blvd
Unit # 2
Mississauga, ON
CANADA L5N 6S2

Report Date: 2026/01/06
Report #: R8678166
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C5G2698
Received: 2025/12/29, 14:18

Sample Matrix: Bulk
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Metals in Paint	1	2026/01/03	2026/01/05	CAM SOP-00408	EPA 6010D m
Metals in Paint	7	2026/01/03	2026/01/06	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.

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 #: 352293.01
Your C.O.C. #: NA

Attention: Jessica Cozzitorto

Pinchin Ltd
2360 Meadowpine Blvd
Unit # 2
Mississauga, ON
CANADA L5N 6S2

Report Date: 2026/01/06
Report #: R8678166
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C5G2698
Received: 2025/12/29, 14:18

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

==========

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ELEMENTS BY ATOMIC SPECTROSCOPY (BULK)

Bureau Veritas ID		AYSZ67			AYSZ68			
Sampling Date		2025/12/23			2025/12/23			
COC Number		NA			NA			
	UNITS	L0001, WALL, CONCRETE (PRECAST), GREY ON BLOCK, LOC:5229, COR	RDL	MDL	L0002, STRUCTURE, METAL, RED ON BEAM, LOC:5229, CORRIDOR	RDL	MDL	QC Batch
Metals								
Lead (Pb)	%	0.00079	0.00010	0.000030	0.00086	0.00060	0.00018	A082905

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		AYSZ69	AYSZ70			
Sampling Date		2025/12/23	2025/12/23			
COC Number		NA	NA			
	UNITS	L0003, WALL, CONCRETE (PRECAST), CREAM AND BLUE ON BLOCK, LO	L0004, WALL, CONCRETE (PRECAST), GREY ON BLOCK, LOC:5197, STAF	RDL	MDL	QC Batch
Metals						
Lead (Pb)	%	0.030	0.00030	0.00010	0.000030	A082905

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		AYSZ71			AYSZ72			
Sampling Date		2025/12/23			2025/12/23			
COC Number		NA			NA			
	UNITS	L0005, OTHER, METAL, GREY ON DOOR AND FRAME, LOC: 5178, WAS	RDL	MDL	L0006, WALL, CONCRETE (PRECAST), WHITE ON BLOCK, LOC:5189, BD	RDL	MDL	QC Batch
Metals								
Lead (Pb)	%	0.00072	0.00015	0.000045	0.030	0.00010	0.000030	A082905

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (BULK)

Bureau Veritas ID		AYSZ73	AYSZ74			
Sampling Date		2025/12/23	2025/12/23			
COC Number		NA	NA			
	UNITS	L0007, WALL, CONCRETE (PRECAST), WHITE ON BLOCK, LOC:5231, CO	L0008, WALL, CONCRETE (PRECAST), BLUE ON BLOCK, LOC:5178, WAS	RDL	MDL	QC Batch
Metals						
Lead (Pb)	%	0.00021	0.062	0.00010	0.000030	A082905

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TEST SUMMARY

Bureau Veritas ID: AYSZ67 **Collected:** 2025/12/23
Sample ID: L0001, WALL, CONCRETE (PRECAST), GREY ON BLOCK, LOC:5229, COR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

Bureau Veritas ID: AYSZ68 **Collected:** 2025/12/23
Sample ID: L0002, STRUCTURE, METAL, RED ON BEAM, LOC:5229, CORRIDOR **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

Bureau Veritas ID: AYSZ69 **Collected:** 2025/12/23
Sample ID: L0003, WALL, CONCRETE (PRECAST), CREAM AND BLUE ON BLOCK, LO **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

Bureau Veritas ID: AYSZ70 **Collected:** 2025/12/23
Sample ID: L0004, WALL, CONCRETE (PRECAST), GREY ON BLOCK, LOC:5197, STAF **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

Bureau Veritas ID: AYSZ71 **Collected:** 2025/12/23
Sample ID: L0005, OTHER, METAL, GREY ON DOOR AND FRAME, LOC: 5178, WAS **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

Bureau Veritas ID: AYSZ72 **Collected:** 2025/12/23
Sample ID: L0006, WALL, CONCRETE (PRECAST), WHITE ON BLOCK, LOC:5189, BD **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

Bureau Veritas ID: AYSZ73 **Collected:** 2025/12/23
Sample ID: L0007, WALL, CONCRETE (PRECAST), WHITE ON BLOCK, LOC:5231, CO **Shipped:**
Matrix: Bulk **Received:** 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/06	Medhat Nasr

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Bureau Veritas Job #: C5G2698
Report Date: 2026/01/06

Pinchin Ltd
Client Project #: 352293.01
Sampler Initials: BW

TEST SUMMARY

Bureau Veritas ID: AYSZ74
Sample ID: L0008, WALL, CONCRETE (PRECAST), BLUE ON BLOCK, LOC:5178, WAS
Matrix: Bulk

Collected: 2025/12/23
Shipped:
Received: 2025/12/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Paint	ICP	A082905	2026/01/03	2026/01/05	Medhat Nasr

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GENERAL COMMENTS

Sample AYSZ68 [L0002, STRUCTURE, METAL, RED ON BEAM, LOC:5229, 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 AYSZ71 [L0005, OTHER, METAL, GREY ON DOOR AND FRAME, LOC: 5178, WAS] : 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.

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QUALITY ASSURANCE REPORT

			Method Blank		QC Standard	
QC Batch	**Parameter**	**Date**	**Value**	**UNITS**	**% Recovery**	**QC Limits**
A082905	Lead (Pb)	2026/01/05	<0.00010	%	95	75 - 125

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.

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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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2025/12/29 14:18

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

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: Pinchin Ltd.	Company Name:	Quotation #:	[x] Regular TAT (5-7 days) Most analyses
Contact Name: Ben Weir Jessica Cozzitorto	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	Address:	Project #: 352293.01	Rush TAT (Surcharges will be applied)
Phone: Fax:	Phone: Fax:	Site Location:	[ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Email: bweir@pinchin.com jcozzitorto@pinchin.com	Email:	Site #:	
		Site Location Province: _____ ON	Date Required: 2026-01-05
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY		Sampled By: _____ Ben Weir	Rush Confirmation #:

Regulation 153	Other Regulations
[ ] Table 1 [ ] Res/Park [ ] Med/ Fine	[ ] CCME [ ] Sanitary Sewer Bylaw
[ ] Table 2 [ ] Ind/Comm [ ] Coarse	[ ] MISA [ ] Storm Sewer Bylaw
[ ] Table 3 [ ] Agri/ Other	[ ] PWQO Region
[ ] Table _____	[ ] Other (Specify)
FOR RSC (PLEASE CIRCLE) Y / N	[ ] REG 558 (MIN. 3 DAY TAT REQUIRED)
	[ ] REG 406 Table _____

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	Lead (Pb) in Paints	PCBs	HOLD- DO NOT ANALYZE
L0001, Wall, Concrete (precast), Grey On Block,Loc:5229,Cor	2025-12-23		BULK									x		
L0002, Structure, Metal, Red On Beam,Loc:5229,Corridor	2025-12-23		BULK									x		
L0003, Wall, Concrete (precast), Cream And Blue On Block,Lo	2025-12-23		BULK									x		
L0004, Wall, Concrete (precast), Grey On Block,Loc:5197,Staf	2025-12-23		BULK									x		
L0005, Other, Metal, Grey On Door And Frame,Loc:5178,Was	2025-12-23		BULK									x		
L0006, Wall, Concrete (precast), White On Block,Loc:5189,Bo	2025-12-23		BULK									x		
L0007, Wall, Concrete (precast), White On Block,Loc:5231,Co	2025-12-23		BULK									x		
L0008, Wall, Concrete (precast), Blue On Block,Loc:5178,Was	2025-12-23		BULK									x		

Analysis Requested

LABORATORY USE ONLY

CUSTODY SEAL Y / N (N)

COOLER TEMPERATURES

Present	Intact	
		NA

COOLING MEDIA PRESENT: Y / N (N)

COMMENTS

NONT-2025-12-4584

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	BV JOB #
Ben Weir	2025-12-24		ANMOLPREET SINGH	2025/12/29	14:18	

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.

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
BC	0.5%[1]	0.5%
Alberta	Any Amount[2]	Any Amount[2]
Saskatchewan	>0.5%[1]	>1%
Manitoba	0.1%[1]	1%
Ontario	**0.5%**	**0.5%**
Nova Scotia	0.5%[1]	0.5%
New Brunswick	1%	1%
Prince Edward Island	1%	1%
Newfoundland and Labrador	1%	1%
Yukon	1%	1%
Nunavut	1%	1%
Northwest Territories	1%	1%
Federal	1%	1%

* If there is a conflict between federal and provincial criteria, the more stringent will apply.

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.

Asbestos materials were evaluated in order to make recommendations regarding any remedial work. The priority for remedial action was based on several factors:

- Friability (friable or non-friable)
- Condition (good, fair, poor, debris)
- Accessibility (ranking from accessible to all building users to inaccessible)
- Visibility (whether the material is obscured by other building components)
- Efficiency of the work (for example, if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition)

[1] Or any amount if vermiculite
[2] The Government of Alberta in their guideline document entitled the “Alberta Asbestos Abatement Manual” (August 2019), defines an Asbestos-Containing Material as a product or building material that contains asbestos in any quantity or percentage.

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.

Analytical results were compared to the following criteria.

Jurisdiction*	Units (%)	Units (ppm) / (mg/kg)
British Columbia**	0.009	90
Alberta	0.009	90
Saskatchewan	0.009	90
Manitoba	0.009	90
Ontario	**0.009**	**90**
Nova Scotia	0.009	90
New Brunswick	0.009	90
Prince Edward Island	0.009	90
Newfoundland	0.009	90
Yukon	0.009	90
Nunavut	0.1	1,000
Northwest Territories	0.1	1,000
Federal	0.009	90

* If there is a conflict between federal and provincial criteria, the more stringent will apply.

** WorkSafe BC health and safety regulations do not numerically define what would be considered a lead-containing paint or coating. In general, paints containing lead >0.009% may require work procedures if disturbed.

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.

1.5 Polychlorinated Biphenyls

The potential for light ballast and oil filled transformers to contain PCBs was based on the age of the building, a review of maintenance records, and examination of labels or nameplates on equipment, where present and accessible. The information was compared to known ban dates of PCBs and Environment Canada publications.

Dry type transformers were presumed to be free of dielectric fluids and hence non-PCB.

Fluids (mineral oil, hydraulic, Aroclor or Askarel) in transformers or other equipment were not sampled for PCB content.

Caulking and sealants were sampled and submitted for PCB analysis following EPA 3550C/8082A.

Sample results are compared to the criteria of 50 mg/kg for solids as stated in the PCB Regulation, SOR/2008-273.

1.6 Visible Mould

The presence of mould or water damage was determined by visual inspection of exposed building surfaces. If any mould growth or water damage was concealed within building cavities it was not addressed in this assessment.

Template: Methodology for Hazardous Building Materials Assessment, HAZ, November 13 2024

APPENDIX IV
Location Summary Report

LOCATIONS LIST

Client:HWDSB **Site: 168 Huron Avenue, Ancaster, ON**
Building Name: Frank Panabaker Elementary School North Campus
Survey Date: **Last Re-Assessment:**
Building Phases: A: 1959

Location No.	Name or Description	Area ft²	Floor No.	Bldg. Phase	Notes
5177	Coat Room, room no. 110E	100	1	A	
5178	Washroom, room no. 110F	50	1	A	
5179	Coat Room, room no. 110G	100	1	A	
5180	Corridor, room no. 110	260	1	A	
5187	Girls Washroom, room no. 114	315	1	A	
5188	Slop Sink closet, room no. 115	75	1	A	
5189	Boys Washroom, room no. 116	315	1	A	
5196	Boiler Room, room no. 117D	475	1	A	
5197	Staff Washroom, room no. 118	25	1	A	
5198	Staff Washroom, room no. 120	25	1	A	
5199	Staff Room, room no. 119	600	1	A	
5201	Kitchen, room no. 119A	80	1	A	
5202	Corridor, room no. 103	60	1	A	
5216	Girls Washroom, room no. 124	315	1	A	
5217	Closet, room no. 125	75	1	A	
5218	Boy's Washroom, room no. 126	315	1	A	
5229	Corridor, room no. 122	500	1	A	
5231	Corridor, room no. 103-104	500	1	A	

APPENDIX V
Hazardous Materials Summary Report / Sample Log

HMIS
HAZARDOUS MATERIALS INVENTORY SYSTEM

HAZARDOUS MATERIALS SUMMARY / SAMPLE LOG

PINCHIN
1.855.PINCHIN www.pinchin.com

Client:HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus** **Survey Date:**

HAZMAT	Sample No	System/Component/Material/Sample Description	Locations	Bldg. Phase	LF	SF	EA	%	Type	Positive	Friability
Asbestos	S0001 ABC	Piping | | Parging Cement |	5187,5188,5189,5197,5199,5201,5216,5217,5218	A	0	0	74	0	Chrysotile	Yes	F
Asbestos	S0002 ABC	Floor | | Thin-set |	5187,5189,5216,5218,5231	A	0	1285	0	0	None Detected	No	
Asbestos	S0003 ABC	Other | | Caulking | White	5187,5189,5216,5218	A	90	0	0	0	None Detected	No	
Asbestos	S0004 ABC	Other | Door Frame | Caulking | Grey	5177,5178,5187,5188,5189,5196,5197,5198,5199 5202,5217,5218,5229,5231	A	365	0	0	0	Chrysotile	Yes	NF
Asbestos	S0005 ABC	Other | Door Frame | Caulking | White	5216	A	20	0	0	0	None Detected	No	
Asbestos	S0006 ABCD	Floor | | Vinyl Floor Tile And Mastic | 12x12 White With Pink And Blue Fleck	5188,5217,5229,5231	A	0	625	0	0	None Detected	No	
Asbestos	S0007 ABCDEFG	Wall | | Paint | On Block	5177,5178,5179,5180,5187,5188,5189,5196,5197 5198,5199,5201,5202,5216,5217,5218,5229,5231	A	0	12410	0	0	None Detected	No	
Asbestos	S0008 ABC	Floor | | Vinyl Floor Tile And Mastic | 12x12 Grey With White And Black Fleck	5197,5198,5202	A	0	110	0	0	None Detected	No	
Asbestos	S0009 ABC	Other | | Caulking | White On Urinal	5189,5218	A	80	0	0	0	None Detected	No	
Asbestos	S0010 ABC	Floor | | Thin-set |	5177,5178,5179,5180	A	0	510	0	0	None Detected	No	
Asbestos	S0011 ABC	Floor | | Caulking |	5197,5198	A	30	0	0	0	None Detected	No	
Asbestos	V9500	Other | | Thin-set | Ceramic Toiler Paper Holder	5197,5198	A	0	2	0	0	Presumed Asbestos	Yes	PF
Asbestos	V0000	Ceiling | Acoustic Tile | Ceiling Tiles (lay-in) |	5180,5202,5229,5231	A	0	560	0	0	Non Asbestos	No	
Paint	L0001	Wall | Concrete (precast) | Grey On Block	5229	A	0	1000	0	0		No	-
Paint	L0002	Structure | Metal | Red On Beam	5180,5202,5229,5231	A	0	200	0	0		No	-
Paint	L0003	Wall | Concrete (precast) | Cream And Blue On Block	5199,5201	A	0	1350	0	0	Lead (Low)	Yes	-
Paint	L0004	Wall | Concrete (precast) | Grey On Block	5197,5198	A	0	100	0	0		No	-
Paint	L0005	Other | Metal | Grey On Door And Frame	5177,5178,5187,5188,5189,5196,5197,5198,5199 5202,5216,5217,5218,5229,5231	A	0	345	0	0		No	-
Paint	L0006	Wall | Concrete (precast) | White On Block	5187,5189,5216,5218	A	0	2520	0	0	Lead (Low)	Yes	-
Paint	L0007	Wall | Concrete (precast) | White On Block	5177,5179,5180,5202,5231	A	0	2520	0	0		No	-
Paint	L0008	Wall | Concrete (precast) | Blue On Block	5178	A	0	100	0	0	Lead (Low)	Yes	-
Hg	V9500	Mercury Vapour Lamp	5177,5178,5179,5180,5187,5188,5189,5196,5197 5198,5199,5201,5202,5216,5217,5218,5229,5231	A	0	0	150	0	Presumed Hg	Yes	-

Legend:

Sample number	
S####	Asbestos sample collected
L####	Paint sample collected
P####	PCB sample collected
M####	Mould sample collected
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

Units	
SF	Square feet
LF	Linear feet
EA	Each
%	Percentage

NF	Non Friable material.
F	Friable material
PF	Potentially Friable material

APPENDIX VI
All Data Report

HMIS
HAZARDOUS MATERIALS INVENTORY SYSTEM

ALL DATA REPORT

PINCHIN
1.855.PINCHIN www.pinchin.com

Client: HWDSB | **Site: 168 Huron Avenue, Ancaster, ON** | **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5177 : Coat Room | **Floor: 1** | **Room #: 110E** | **Area (sqft): 100**

Survey Date: 2025-12-23 | **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set		Ceramic Tiles	D	N		100			SF	V0010	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping	Not found															
Structure	Not accessible															
Wall		Paint, On block			A	Y		200			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB | **Site: 168 Huron Avenue, Ancaster, ON** | **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5177 : Coat Room | **Floor: 1** | **Room #: 110E** | **Area (sqft): 100**

Survey Date: 2025-12-23 | **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Wall	Concrete (precast)	200		SF	V0007	White on block	Pb: 0.00021 %	No

Client: HWDSB | **Site: 168 Huron Avenue, Ancaster, ON** | **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5177 : Coat Room | **Floor: 1** | **Room #: 110E** | **Area (sqft): 100**

Survey Date: 2025-12-23 | **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5178 : Washroom **Floor: 1** **Room #: 110F** **Area (sqft): 50**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set		Ceramic Tiles	D	N		50			SF	V0010	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Structure	Not accessible															
Wall		Paint, On block			A	Y		100			SF	S0007G	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5178 : Washroom **Floor: 1** **Room #: 110F** **Area (sqft): 50**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	100		SF	L0008	Blue on block	Pb: 0.062 %	Lead (Low)
Other	Metal	15		SF	L0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5178 : Washroom **Floor: 1** **Room #: 110F** **Area (sqft): 50**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5179 : Coat Room **Floor: 1** **Room #: 110G** **Area (sqft): 100**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set		Ceramic Tiles	D	N		100			SF	S0010ABC	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Piping	Not found															
Structure	Not accessible															
Wall		Paint, On block			A	Y		2000			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5179 : Coat Room **Floor: 1** **Room #: 110G** **Area (sqft): 100**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	200		SF	V0007	White on block	Pb: 0.00021 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5179 : Coat Room **Floor: 1** **Room #: 110G** **Area (sqft): 100**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5180 : Corridor **Floor: 1** **Room #: 110** **Area (sqft): 260**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Ceiling[1]	Acoustic tile	Ceiling Tiles (lay-in)			C	Y		100			SF	V0000	Non-Asbestos		None	
Duct	Not found															
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set		Ceramic Tiles	D	N		260			SF	V0010	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Piping		Fibreglass			C	Y										
Structure		Steel			C	N										
Wall		Paint, On block			A	Y		520			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

1 - 12/15/98

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5180 : Corridor **Floor: 1** **Room #: 110** **Area (sqft): 260**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	1000		SF	V0007	White on block	Pb: 0.00021 %	No
Structure	Metal	50		SF	V0002	Red on beam	Pb: 0.00086 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5180 : Corridor **Floor: 1** **Room #: 110** **Area (sqft): 260**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5187 : Girls Washroom **Floor: 1** **Room #: 114** **Area (sqft): 315**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles														
Floor		Thin-set			D	N		315			SF	S0002C	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other		Caulking, White on sink			A	Y		20			LF	V0003	None Detected	N.D.	None	
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	S0004C	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		4(7)			EA	V0001	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		630			SF	S0007E	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5187 : Girls Washroom **Floor: 1** **Room #: 114** **Area (sqft): 315**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Wall	Concrete (precast)	630		SF	V0006	White on block	Pb: 0.030 %	Lead (Low)

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5187 : Girls Washroom **Floor: 1** **Room #: 114** **Area (sqft): 315**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5188 : Slop Sink closet **Floor: 1** **Room #: 115** **Area (sqft): 75**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 white with pink and blue fleck			A	Y		75			SF	V0006	None Detected	N.D.	None	
Mechanical Equipment	Domestic hot water tank	Not Insulated			A	Y										
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		25(7)			EA	V0001	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		150			SF	V0007	None Detected	N.D.	None	

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5188 : Slop Sink closet **Floor: 1** **Room #: 115** **Area (sqft): 75**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5188 : Slop Sink closet **Floor: 1** **Room #: 115** **Area (sqft): 75**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5189 : Boys Washroom **Floor: 1** **Room #: 116** **Area (sqft): 315**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles														
Floor		Thin-set			D	N		315			SF	V0002	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other		Caulking, White on sink			A	Y		20			LF	S0003C	None Detected	N.D.	None	
Other		Caulking, White on urinal			A	Y		40			LF	S0009AB	None Detected	N.D.	None	
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		4(7)			EA	V0001	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		630			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5189 : Boys Washroom **Floor: 1** **Room #: 116** **Area (sqft): 315**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	630		SF	L0006	White on block	Pb: 0.030 %	Lead (Low)
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5189 : Boys Washroom **Floor: 1** **Room #: 116** **Area (sqft): 315**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5196 : Boiler Room **Floor: 1** **Room #: 117D** **Area (sqft): 475**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct		Not Insulated			C	Y										
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Domestic hot water tank	Not Insulated			A	Y										
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			A	Y										
Structure	Not accessible															
Wall		Paint, On block			A	Y		950			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5196 : Boiler Room **Floor: 1** **Room #: 117D** **Area (sqft): 475**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5196 : Boiler Room **Floor: 1** **Room #: 117D** **Area (sqft): 475**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5197 : Staff Washroom **Floor: 1** **Room #: 118** **Area (sqft): 25**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with white and black fleck			A	Y		25			SF	V0008	None Detected	N.D.	None	
Floor		Caulking, grey			A	Y		15			LF	S0011C	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other		Thin-set, ceramic toiler paper holder			D	N		1(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	PF
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		2(7)			EA	V0001	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		50			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5197 : Staff Washroom **Floor: 1** **Room #: 118** **Area (sqft): 25**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	50		SF	L0004	Grey on block	Pb: 0.00030 %	No
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5197 : Staff Washroom **Floor: 1** **Room #: 118** **Area (sqft): 25**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	2	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5198 : Staff Washroom **Floor: 1** **Room #: 120** **Area (sqft): 25**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with white and black fleck			A	Y		25			SF	V0008	None Detected	N.D.	None	
Floor		Caulking, grey			A	Y		15			LF	S0011AB	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other		Thin-set, ceramic toiler paper holder			D	N		1(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	PF
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Structure	Not accessible															
Wall		Paint, On block			A	Y		50			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5198 : Staff Washroom **Floor: 1** **Room #: 120** **Area (sqft): 25**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Wall	Concrete (precast)	50		SF	V0004	Grey on block	Pb: 0.00030 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5198 : Staff Washroom **Floor: 1** **Room #: 120** **Area (sqft): 25**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed
Mercury Vapour Lamp	2	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5199 : Staff Room **Floor: 1** **Room #: 119** **Area (sqft): 600**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		45(7)			LF	S0004B	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		3(7)			EA	V0001	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		1200			SF	S0007D	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5199 : Staff Room **Floor: 1** **Room #: 119** **Area (sqft): 600**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	1200		SF	L0003	Cream and blue on block	Pb: 0.030 %	Lead (Low)
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5199 : Staff Room **Floor: 1** **Room #: 119** **Area (sqft): 600**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5201 : Kitchen **Floor: 1** **Room #: 119A** **Area (sqft): 80**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Mechanical Equipment	Not found															
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		3(7)			EA	V0001	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		1200			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5201 : Kitchen **Floor: 1** **Room #: 119A** **Area (sqft): 80**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	150		SF	V0003	Cream and blue on block	Pb: 0.030 %	Lead (Low)

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5201 : Kitchen **Floor: 1** **Room #: 119A** **Area (sqft): 80**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5202 : Corridor **Floor: 1** **Room #: 103** **Area (sqft): 60**

Survey Date: 2025-12-23 **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[1]	Acoustic tile	Ceiling Tiles (lay-in)			C	Y		60			SF	V0000	Non-Asbestos		None	
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with white and black fleck			A	Y		60			SF	S0008ABC	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		60(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Structure	Beam	Steel			C	N										
Wall		Paint, On block			A	Y		120			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

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Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5202 : Corridor **Floor: 1** **Room #: 103** **Area (sqft): 60**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	45		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Wall	Concrete (precast)	120		SF	V0007	White on block	Pb: 0.00021 %	No
Structure	Metal	50		SF	V0002	Red on beam	Pb: 0.00086 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5202 : Corridor **Floor: 1** **Room #: 103** **Area (sqft): 60**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	16	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5216 : Girls Washroom **Floor: 1** **Room #: 124** **Area (sqft): 315**

Survey Date: 2025-12-22 **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set			D	N		315			SF	S0002A	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other		Caulking, White			A	Y		25			LF	S0003B	None Detected	N.D.	None	
Other	Door frame	Caulking, White			A	Y		20			LF	S0005ABC	None Detected	N.D.	None	
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		4(7)			EA	S0001C	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		630			SF	S0007C	None Detected	N.D.	None	
Wall		Paint, On block			A	Y		1200			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5216 : Girls Washroom **Floor: 1** **Room #: 124** **Area (sqft): 315**

Survey Date: 2025-12-22 **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Wall	Concrete (precast)	630		SF	V0006	White on block	Pb: 0.030 %	Lead (Low)

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5216 : Girls Washroom **Floor: 1** **Room #: 124** **Area (sqft): 315**

Survey Date: 2025-12-22 **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5217 : Closet **Floor: 1** **Room #: 125** **Area (sqft): 75**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 white with pink and blue fleck			A	Y		75			SF	S0006AB	None Detected	N.D.	None	
Mechanical Equipment	Domestic hot water tank	Not Insulated			A	Y										
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		25(7)			EA	S0001B	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		150			SF	V0007	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5217 : Closet **Floor: 1** **Room #: 125** **Area (sqft): 75**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5217 : Closet **Floor: 1** **Room #: 125** **Area (sqft): 75**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	4	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5218 : Boy's Washroom **Floor: 1** **Room #: 126** **Area (sqft): 315**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Duct	Not found															
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set			D	N		315			SF	S0002B	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other		Caulking, White			A	Y		25			LF	S0003A	None Detected	N.D.	None	
Other		Caulking, White on urinal			A	Y		40			LF	S0009C	None Detected	N.D.	None	
Other	Door frame	Caulking, Grey			A	Y		20(7)			LF	S0004A	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Piping		Parging Cement			C	Y		4(7)			EA	S0001A	Chrysotile	25-50%	Confirmed Asbestos	F
Structure	Not accessible															
Wall		Paint, On block			A	Y		630			SF	S0007A	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5218 : Boy's Washroom **Floor: 1** **Room #: 126** **Area (sqft): 315**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Other	Metal	15		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Wall	Concrete (precast)	630		SF	V0006	White on block	Pb: 0.030 %	Lead (Low)

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5218 : Boy's Washroom **Floor: 1** **Room #: 126** **Area (sqft): 315**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	10	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5229 : Corridor **Floor: 1** **Room #: 122** **Area (sqft): 500**

Survey Date: 2025-12-22 **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		Wood			C	Y										
Ceiling[1]	Acoustic tile	Ceiling Tiles (lay-in)			C	Y		200			SF	V0000	Non-Asbestos		None	
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 blue			A	Y		500				S0006C	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		60(7)			LF	V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Structure	Not accessible															
Wall		Paint, On block			A	Y		1000			SF	S0007B	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

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Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5229 : Corridor **Floor: 1** **Room #: 122** **Area (sqft): 500**

Survey Date: 2025-12-22 **Last Re-Assessment: 0000-00-00**

PAINT								
System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	1000		SF	L0001	Grey on block	Pb: 0.00079 %	No
Structure	Metal	50		SF	L0002	Red on beam	Pb: 0.00086 %	No
Other	Metal	45		SF	V0005	grey on door and frame	Pb: 0.00072 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5229 : Corridor **Floor: 1** **Room #: 122** **Area (sqft): 500**

Survey Date: 2025-12-22 **Last Re-Assessment: 0000-00-00**

MERCURY				
Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	16	EA	V9500	Presumed

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5231 : Corridor **Floor: 1** **Room #: 103-104** **Area (sqft): 500**

Survey Date: 2025-12-23 **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		Wood			C	Y										
Ceiling[1]	Acoustic tile	Ceiling Tiles (lay-in)			C	Y		200			SF	V0000	Non-Asbestos		None	
Duct	Not found															
Floor		Vinyl Floor Tile and Mastic, 12x12 yellow			A	Y		475			SF	S0006D	None Detected	N.D.	None	
Floor		Ceramic Tiles			A	Y										
Floor		Thin-set			D	N		25			SF	V0002	None Detected	N.D.	None	
Mechanical Equipment	Not found															
Other	Door frame	Caulking, Grey			A	Y		20(7)				V0004	Chrysotile	0.5-5%	Confirmed Asbestos	NF
Piping		Fibreglass			C	Y										
Structure	Not accessible															
Wall		Paint, On block			A	Y		1000			SF	S0007F	None Detected	N.D.	None	
Wall		Concrete Block			A	Y										

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Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5231 : Corridor **Floor: 1** **Room #: 103-104** **Area (sqft): 500**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

PAINT

System	Item	Good	Poor	Unit	Sample	Sample Description	Amount	Hazard
Wall	Concrete (precast)	1000		SF	L0007	White on block	Pb: 0.00021 %	No
Other	Metal	75		SF	V0005	grey on door and frame	Pb: 0.00072 %	No
Structure	Metal	50		SF	V0002	Red on beam	Pb: 0.00086 %	No

Client: HWDSB **Site: 168 Huron Avenue, Ancaster, ON** **Building Name: Frank Panabaker Elementary School North Campus**

Location: #5231 : Corridor **Floor: 1** **Room #: 103-104** **Area (sqft): 500**

Survey Date: 2025-12-23 **Last Re-Assessment: 0000-00-00**

MERCURY

Component	Quantity	Unit	Sample	Hazard
Mercury Vapour Lamp	16	EA	V9500	Presumed

Legend:

Sample number	
S####	Asbestos sample collected
L####	Paint sample collected
P####	PCB sample collected
M####	Mould sample collected
V####	Material is visually identified to be identical to S####
V0000	Known non hazardous material
V9000	Material visually identified as a Hazardous Material
V9500	Material is presumed to be a hazardous material

Units	
SF	Square feet
LF	Linear feet
EA	Each
%	Percentage
LF	Linear feet

Other	
A	Access
V	Visible
AP	Air Plenum
F	Friable material
NF	Non Friable material
PF	Potentially Friable material
Pb	Lead
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

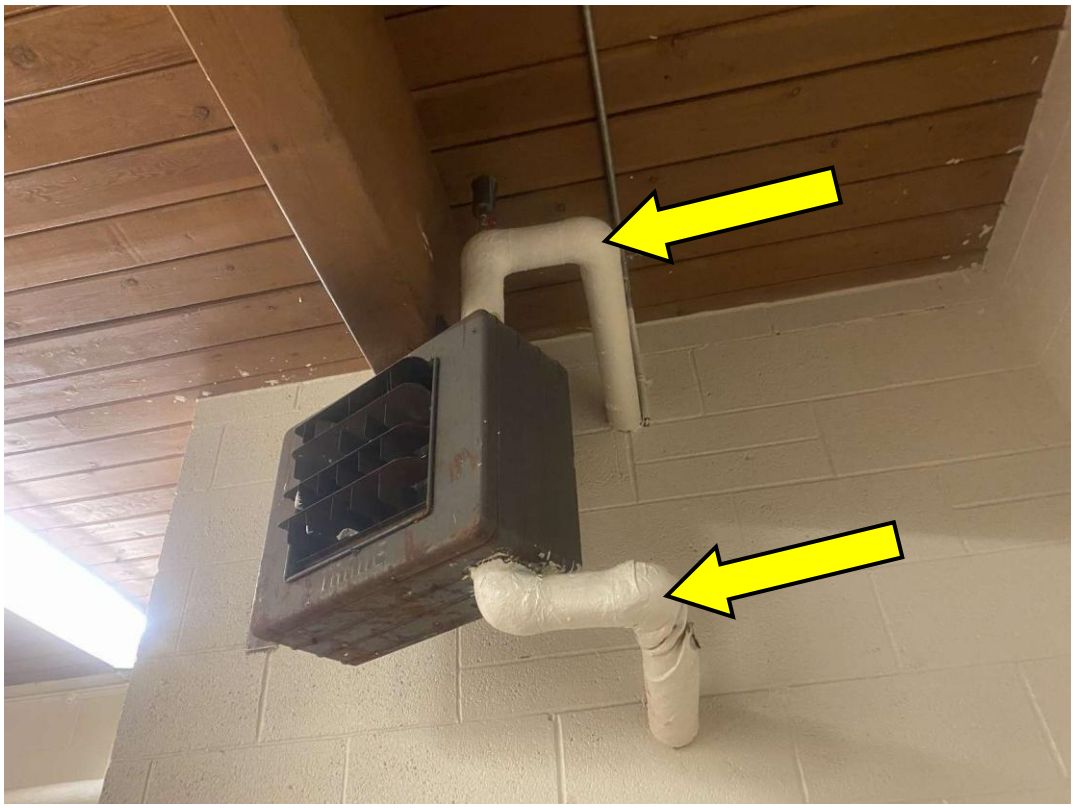
Visible	
Y	The material is visible when standing on the floor of the room, without the removal or opening of other building components (e.g. ceiling tiles or access panels).
N	The material is not visible to view when standing on the floor of the room and requires the removal of a building component (e.g. 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

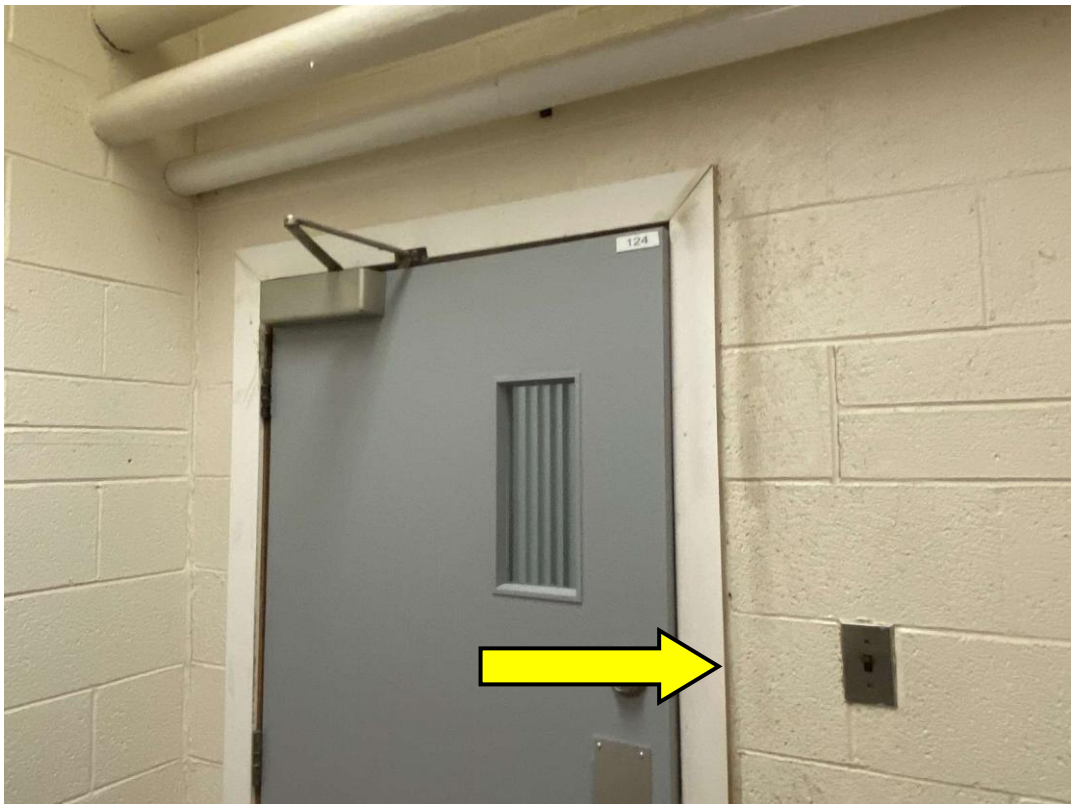


S0001A (Confirmed Asbestos), Piping, Parging Cement, Boy's Washroom (Location #: 5218)

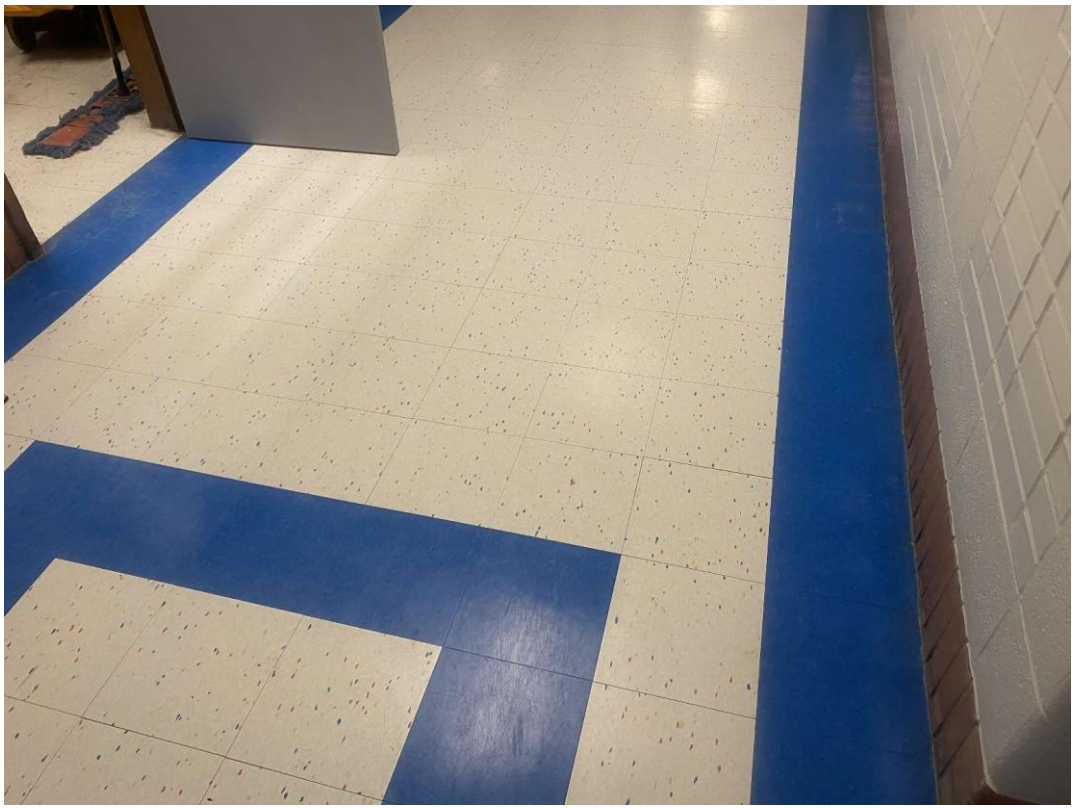
S0002A (None), Floor, Thin-set, Girls Washroom (Location #: 5216)

S0003A (None), White, Other, Caulking, Boy's Washroom (Location #: 5218)

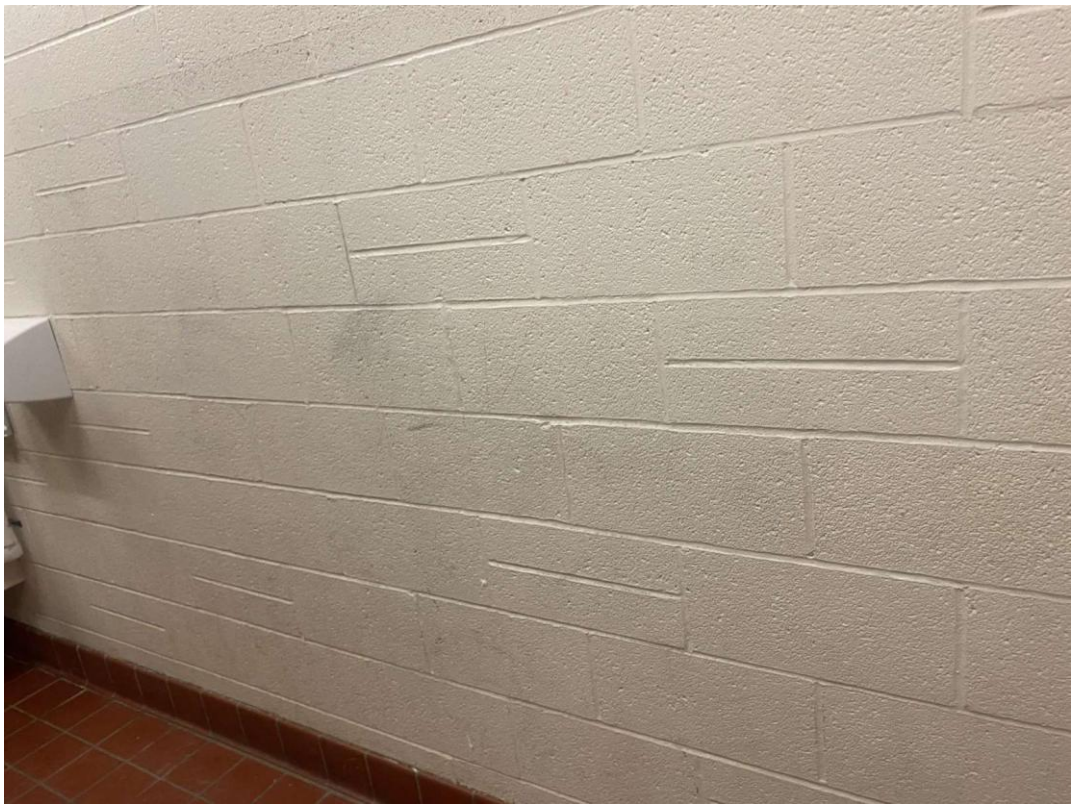
S0004A (Confirmed Asbestos), Grey, Other, Door Frame, Caulking, Boy's Washroom (Location #: 5218)



S0005A (None), White, Other, Door Frame, Caulking, Girls Washroom (Location #: 5216)



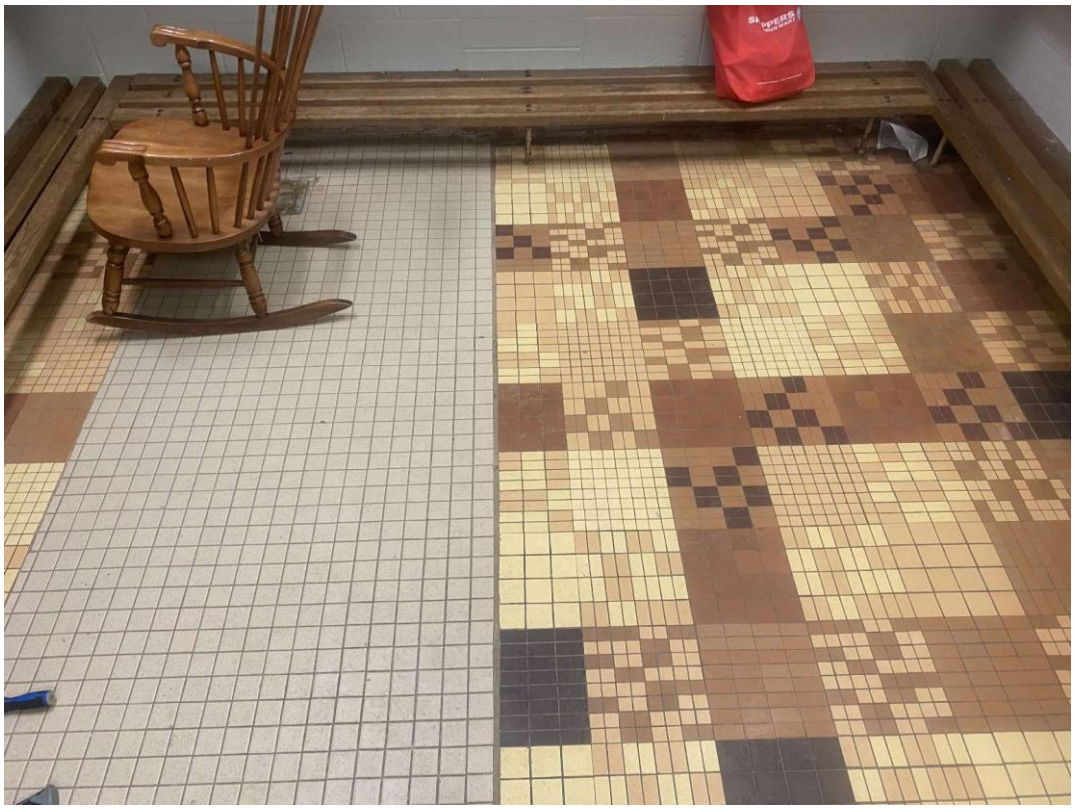
S0006A (None), 12x12 white with pink and blue fleck, Floor, Vinyl Floor Tile and Mastic, Closet (Location #: 5217)



S0007A (None), On block, Wall, Paint, Boy's Washroom (Location #: 5218)

S0008A (None), 12x12 grey with white and black fleck, Floor, Vinyl Floor Tile and Mastic, Corridor (Location #: 5202)

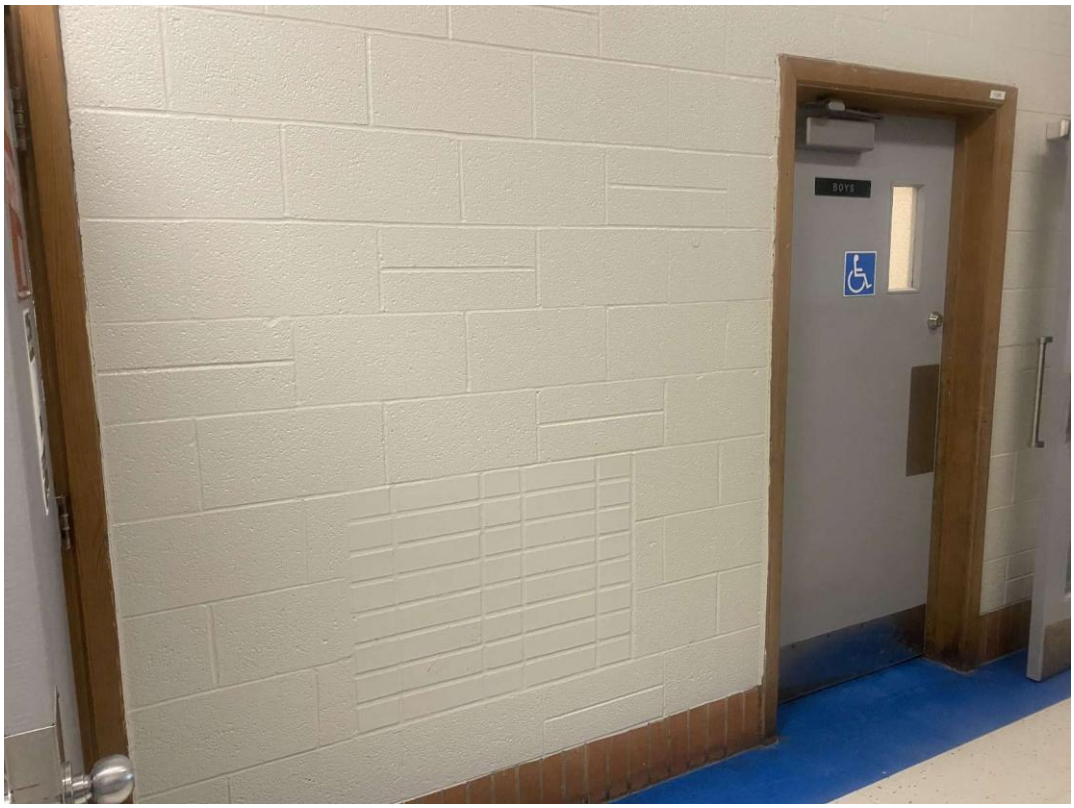
S0009A (None), White on urinal, Other, Caulking, Boys Washroom (Location #: 5189)



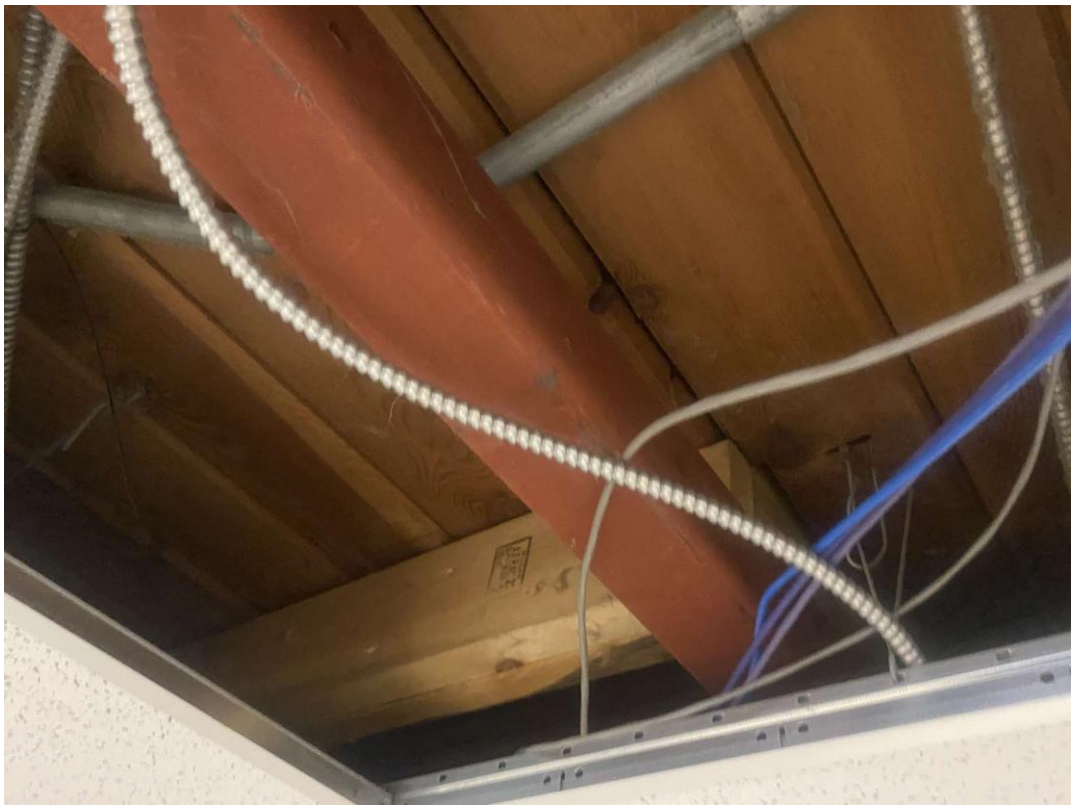
S0010A (None), Floor, Thin-set, Coat Room (Location #: 5179)

S0011C (None), grey, Floor, Caulking, Staff Washroom (Location #: 5197)

V9500 (Presumed Asbestos), ceramic toiler paper holder, Other, Thin-set, Staff Washroom (Location #: 5198)



L0001(Lead, None), Grey on block, Wall, Corridor (Location #: 5229)



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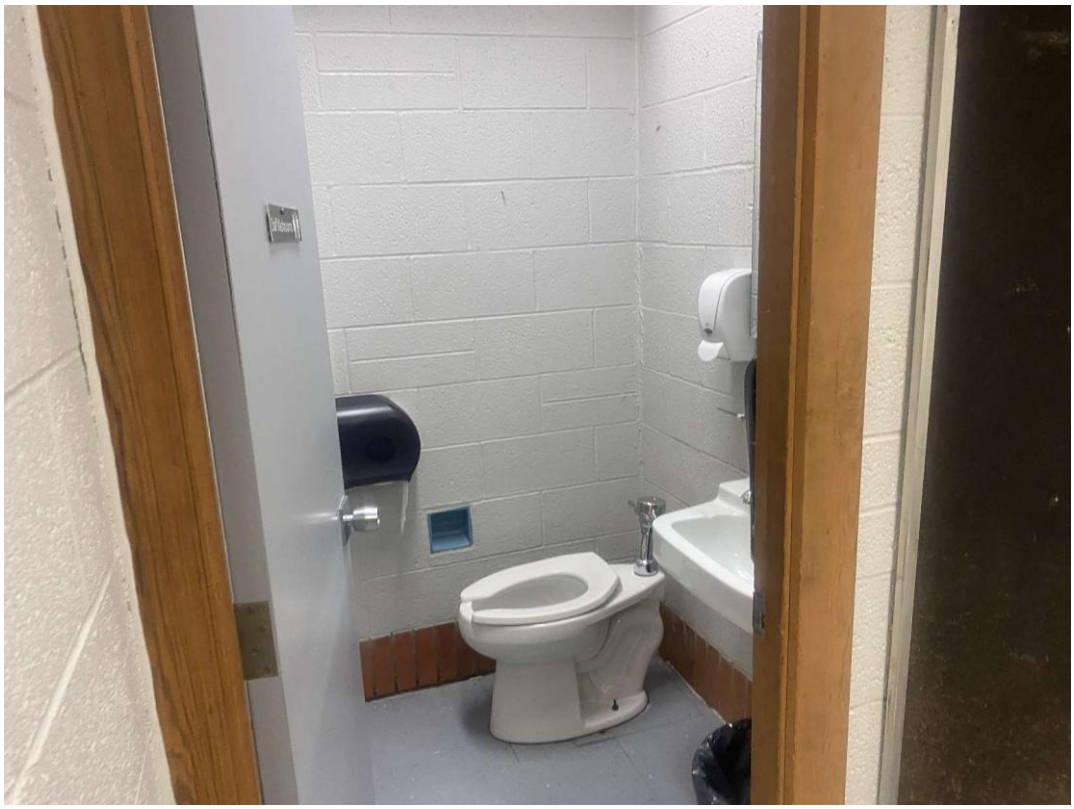
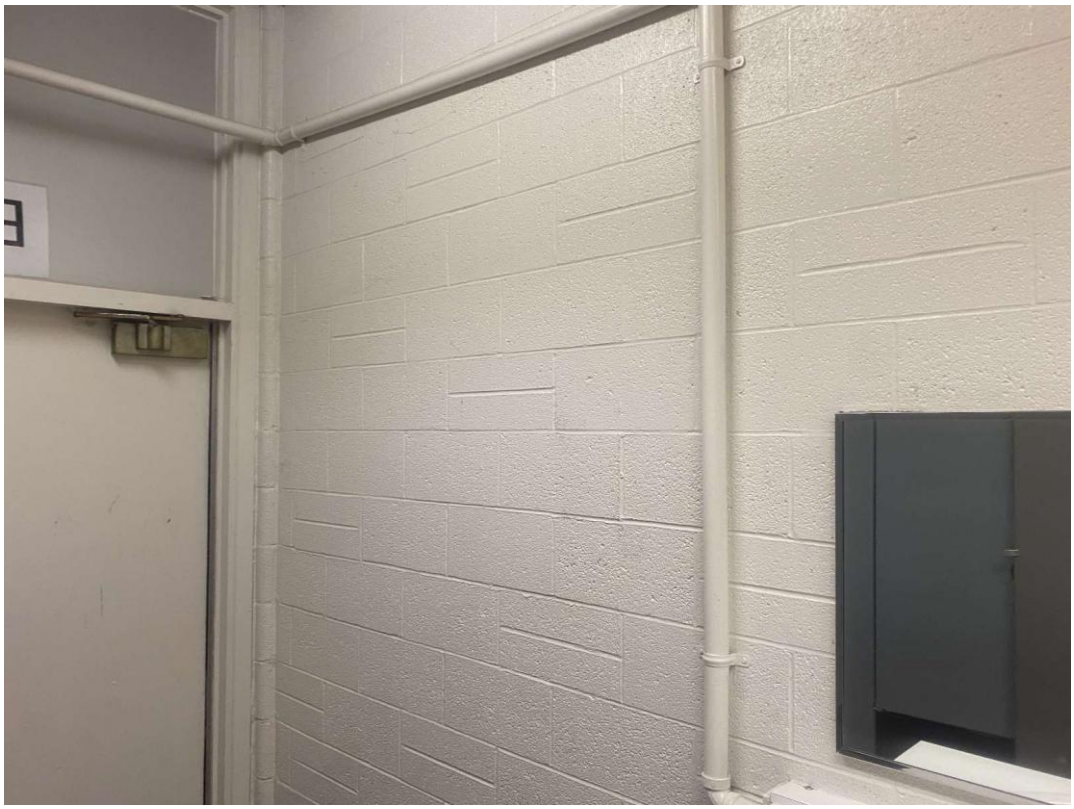
L0003(Lead, Low), Cream and blue on block, Wall, Staff Room (Location #: 5199)

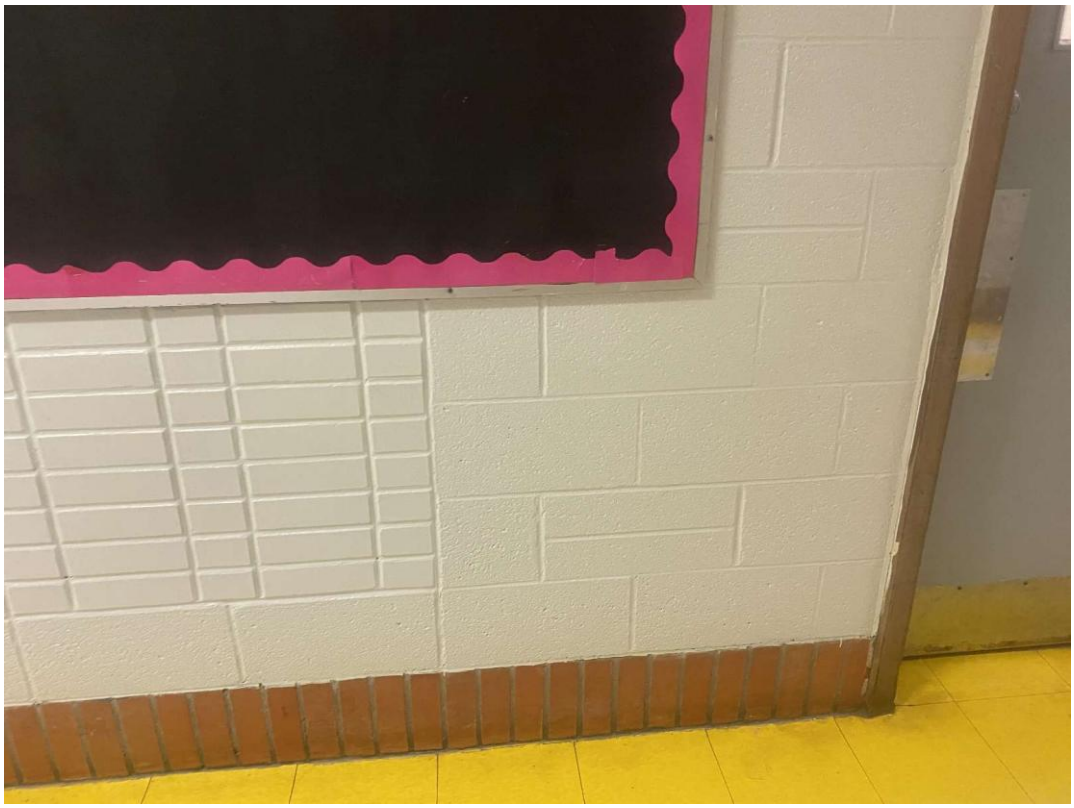


L0004(Lead, None), Grey on block, Wall, Staff Washroom (Location #: 5197)

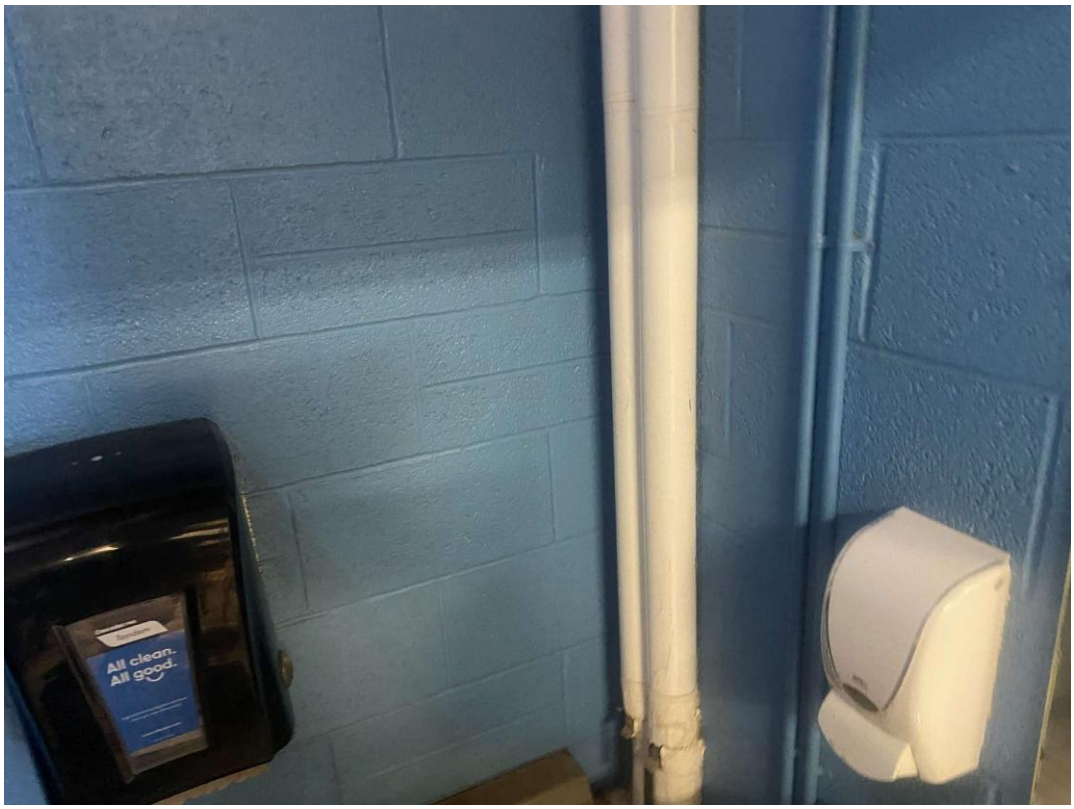
L0005(Lead, None), grey on door and frame, Other, Washroom (Location #: 5178)



L0006(Lead, Low), White on block, Wall, Boys Washroom (Location #: 5189)



L0007(Lead, None), White on block, Wall, Corridor (Location #: 5231)



L0008(Lead, Low), Blue on block, Wall, Washroom (Location #: 5178)

Mercury, V9500(Presumed), Mercury Vapour Lamp, Corridor (Location #: 5202)

Building Photo

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 00.01 Asbestos Abatement – Type 1 Procedures

.2 Section 02 82 00.04 Asbestos Abatement – Type 2 Glove Bag Method

.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), Washroom Renovations, Frank Panabaker Elementary School North Campus, 168 Huron Avenue, Ontario”, dated February 10, 2026, prepared by Pinchin Ltd., file number 352293.010.

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 1 procedures prescribed in the Section identified in Related Work, remove and dispose of the following:

.1 Doors and frames with asbestos-containing caulking, and presumed interior insulations where doors are scheduled for removal. Completely remove caulking from substrate.

.1 Door frames can be disposed of as clean waste once all caulking is removed.

.2 Ceramic toilet paper holders with presumed asbestos-containing thin-set.

.3 Fire doors.

.4 Mirrors with presumed asbestos-containing mastic. Completely remove mastic from substrate.

.5 Using Glove Bag procedures prescribed in the Section identified in Related Work, remove and dispose of asbestos-containing pipe insulation where scheduled to be removed or in tie-in locations. Include to remove all asbestos-containing pipe insulation and debris where found to be present in concealed locations (e.g. pipe chases, wall cavities etc.).

.1 If for reasons of pipe geometry or access, Glove Bag procedures cannot be used, remove and dispose of asbestos-containing insulations following Type 2 procedures outlined in O.Reg. 278/05 for less than 1 square meter, or following Type 3 procedures outlined in O.Reg. 278/05 for quantities greater than 1 square meter.

.6 Follow mercury procedures when removing all light fixtures and fluorescent light tubes. Place all light fixtures into containers to avoid breakage.

.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 (EAC) DOP/PAO Testing Guideline 2013 or ANSI/ASME N510-2007.

.12 Fitting: Individual segments or pieces of a mechanical service line which may include but is not limited to the hangers, tees, elbows, joints, valves, unions, etc.

.13 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.

.14 HEPA: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.

.15 Milestone Inspection: Inspection of the Abatement Work Area at a defined point in the abatement operation.

.16 Negative Pressure: A reduced pressure within the Abatement Work Area (> 0.02 inches of water column) established by extracting air directly from Abatement Work Area and discharging it to exterior of building.

.17 Non-Friable Material: Material that when dry cannot be crumbled, pulverized or powdered by hand pressure.

.18 Occupied Area: Any area of the building or adjoining space outside the Abatement Work Area.

.19 Personnel: All Contractor's employees, sub-contractors employees, supervisors.

.20 PCM: Phase Contrast Microscopy.

.21 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).

.22 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 ladings 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, or from within the Abatement Work Area during or following Glove Bag Work, 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 Discharge Ducting: Polyethylene Tubing. Reinforced with wire. Diameter to equal negative pressure machine discharge. Not to be longer than required, or so long that negative pressure is compromised.

.7 Ground Fault Panel: Electrical panel as follows:

.1 Ground fault circuit interrupters of sufficient capacity to power temporary electrical equipment and lights in Asbestos Work Area.

.2 Interrupters to have a 5 mA ground fault protection.

.3 Necessary accessories including main switch disconnect, ground fault interrupter lights, test switch to ensure unit is working, and reset switch.

.4 Openings sealed to prevent moisture or dust penetration.

.5 Inspected by the Electrical Safety Authority.

.6 Panel uses CSA approved parts and been constructed, inspected and installed by a licensed electrician.

.7 Provide one Ground Fault Panel for each 5,000 square feet (500 square metres) of Abatement Work Area.

.8 HEPA Filtered Negative Pressure Machine: Portable air handling system which extracts air directly from the Abatement Work Area and discharges the air to the exterior of the building. Equipped as follows:

.1 Prefilter and HEPA filter. Air must pass HEPA filter before discharge.

.2 Pressure differential gauge to monitor filter loading.

.3 Auto shut off and warning system for HEPA filter failure.

.4 Separate hold down clamps to retain HEPA filter in place during change of prefilter.

.9 HEPA Vacuum: Vacuum with necessary fittings, tools and attachments. Discharged air must pass through a HEPA filter.

.10 Hose: Leak-proof, minimum busting 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.

.11 OSB: Oriented Strand Board.

.12 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.

.13 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.

.14 Protective Clothing: Disposable coveralls complete with head covering and full body covering that fits snugly at the ankles, wrists and neck.

.15 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.

.16 Sprayer: Garden type portable manual sprayer or water hose with spray attachment if suitable.

.17 Tape: Duct tape or tape suitable for sealing polyethylene to surfaces under both dry and wet conditions in the presence of Amended Water.

.18 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 1 or Low 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.

.1 Provide non-powered half-face respirators with P100 high efficiency (HEPA) cartridge filters when requested by personnel.

.2 When requested by personnel, provide protective clothing.

.2 Provide protective clothing, to all personnel entering the Abatement Work Area.

.3 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.

PART 3 EXECUTION

3.1 Site Preparation

.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 Install one layer of rip-proofing polyethylene sheeting over one layer of polyethylene sheeting on walls, floors, finishes, millwork, electrical equipment, equipment and

furnishings remaining in the Abatement Work Area.

.5 Install polyethylene drop sheets below areas of work.

.6 Install polyethylene sheeting on openings in walls and floors (as required) and seal.

.7 Install signage in clearly visible locations and in sufficient numbers to adequately warn of an asbestos dust hazard.

.8 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.

.9 Provide power from ground fault interrupt circuits.

.10 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.

.11 Provide amended water for wetting ACM, and adequate method of wetting (garden sprayers, airless sprayers, etc).

.12 Without disturbing asbestos-containing materials, remove and dispose of non-hazardous materials as clean waste prior to asbestos removal work, where possible.

3.2 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 Maintain Abatement Work Area in tidy condition.

.4 Remove any standing water on polyethylene/floor at the end of every shift.

.5 Turn off water supply to any hoses and reduce pressure in hose, prior to leaving the Abatement Work Area at end of shift.

3.3 Asbestos Removal - General

.1 Do not use powered tools or non-hand held tools.

.2 Do not use compressed air to clean or remove dust or debris.

.3 Do not break, cut, drill, abrade, grind, sand or vibrate ACM if it cannot be wetted. Type 2 procedures would be required if the material cannot be wetted due to hazard or damage.

.4 Wet ACM prior to work and keep ACM wet throughout the removal process.

.5 Frequently and at regular intervals during the work, clean up dust and waste using HEPA

vacuums and/or wet sweeping or mopping.

.6 Frequently and at regular intervals, place all waste in asbestos waste containers.

.7 Immediately upon completion of work, clean area with HEPA vacuum and/or wet sweeping or mopping.

3.4 Asbestos Removal - Removal of Other Non-Friable Asbestos Materials – Caulking, Mirror Mastic, and Thin-Set

.1 Wet all material to be disturbed.

.2 Undo fasteners if necessary to remove material.

.3 Break material only if unavoidable, and wet material if broken during work.

.4 Use only non-powered hand-held tools to remove ACM.

.5 Scrape to remove material adhered to substrate.

.6 Place removed ACM directly into an asbestos waste container.

3.5 Asbestos Removal - Removal of Fire Doors

.1 Wet all material to be disturbed.

.2 Undo fasteners if necessary to remove material.

.3 Use only non-powered hand-held tools to remove ACM.

.4 Remove door and place on poly drop sheets and wrap.

.5 Place removed ACM directly into an asbestos waste container.

3.6 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. As polyethylene is rolled away, immediately remove visible debris beneath with a HEPA vacuum.

.6 Remove remaining polyethylene sheeting and tape.

.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.

3.7 Waste and Material Handling

.1 Refer to Section 02 81 00.

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 Glove Bag procedures, and Pinchin and Owner specific requirements.

.3 If for reasons of pipe temperature, geometry or access, Glove Bag procedures cannot be used, remove and dispose of asbestos-containing insulations following Type 2 procedures outlined in O.Reg. 278/05 for less than 1 square meter, or following Type 3 procedures outlined in O.Reg. 278/05 for quantities greater than 1 square meter.

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 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

2.1 Materials and Equipment

.1 Refer to Section 02 81 00.

.2 Glove Bag: Prefabricated bag which provides a completely sealed envelope surrounding a given section of piping to permit the removal of asbestos-containing insulation from within the bag while maintaining the integrity of the bag and preventing the spread of airborne asbestos fibres. The glove bag shall be equipped with,

.1 sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure

throughout the work period,

.2 valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure,

.3 a tool pouch with a drain,

.4 a seamless bottom and a means of sealing off the lower portion of the bag, and

.5 a high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.

.3 Securing Straps: For some types of Glove Bag, reusable nylon straps at least 25mm wide with metal tightening buckle for sealing ends of bags around pipe and/or insulation.

PART 3 EXECUTION

3.1 Site Preparation - General

.1 Remove to the extent necessary to access piping, 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 Shut down HVAC systems serving the Abatement Work Area.

.1 Install polyethylene sheeting over openings in ducts and at 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.

.4 Install caution tape around work area where existing walls are not present.

.5 Install Signage in clearly visible locations and in sufficient numbers to adequately warn of an asbestos dust hazard.

.6 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.

.7 Cover walls, floors, finishes, millwork, equipment and furnishings below the pipe to be worked on in the Abatement Work Area with polyethylene sheets before disturbing ACM. Drop sheets shall extend a minimum of 1,800 mm from pipe.

.8 Use existing lighting or install temporary lighting to a level that will provide for safe and efficient use of work area - minimum 550 LUX.

.9 Provide Amended Water for wetting ACM, in garden sprayers. Provide one garden sprayer for each worker.

.10 Do not used compressed air to clean or remove and dust or debris when completing work of this section.

.11 Place HEPA Vacuum in Abatement Work Area for each worker.

.12 Place required tools to complete the abatement within the Abatement Work Area.

.13 Post Notice of Project, where required by O.Reg. 278/05.

3.2 Maintenance of Abatement Work Area

.1 Maintain Abatement Work Area in tidy condition.

3.3 Glove Bag Removal

.1 Do not use Glove Bags on hot pipes that may damage Glove Bag. Refer to manufacturer's limitations.

.2 Prior to use of Glove Bag on damaged or unjacketed insulation:

.1 Spray any areas of damaged insulation jacketing with mist of Amended Water.

.2 Tape over damaged insulation to provide temporary repair.

.3 Mist areas of insulation with no jacketing and wrap with polyethylene sheeting and seal with tape.

.3 Place any tools necessary to remove insulation in tool pouch built into Glove Bag.

.4 Inspect the Glove Bag for damage and defects immediately before it is attached to the pipe or duct.

.1 If damage or defects are observed, dispose of Glove Bag.

.5 Install Glove Bag as per manufacturer's instructions.

.6 Remove metal jacketing or banding carefully. Do not damage the Glove Bag.

.7 Remove insulation from pipe as per manufacturer's directions.

.1 Volume and weight of insulation must not exceed capacity of the Glove Bag or supports.

.2 Arrange insulation in the Glove Bag to maximize use of the Glove Bag.

.8 Only glove bags designed to be moved may be re-used on other sections of pipe or moved down same section of pipe (e.g. Safe-T-Strip).

.9 At regular intervals during its use, if damage or defects are observed during the use of the Glove Bag, which cannot be readily repaired with tape and not affect the integrity or strength of the glove bag.

.1 Discontinue use of Glove Bag.

.2 Wash inner surface of Glove Bag.

.3 Wet insulation.

.4 Pull an Asbestos Waste Container over Glove Bag before removing from pipe.

.5 Remove Glove Bag and Asbestos Waste Container, seal with tape.

.6 Place in a second Asbestos Waste Container and seal with tape.

.7 Clean immediate area with a HEPA Vacuum prior to resuming work.

.10 If bag is to be moved along pipe for use on adjacent section of insulation:

.1 Wash inner surface of Glove Bag.

.2 Wash tools and place tools in pouch.

.3 Wet surface of insulation in lower section of bag and any exposed end of asbestos insulation remaining on pipe with Amended Water.

.4 Insert nozzle of HEPA filtered vacuum cleaner into bag through valve and evacuate air from bag.

.5 Seal closure strip.

.6 Loosen securing straps to maintain a loose seal of Glove Bag to insulation or pipe.

.7 Use double throw zipper as necessary to pass hangers.

.8 Tighten straps once bag is in new position and continue insulation removal until Glove Bag is full, work is completed on the pipe or an obstruction prevents further movement of the bag.

.11 If bag is to be removed from a pipe for use on a new section of pipe, perform the following:

.1 Wash inner surface of Glove Bag.

.2 Wash tools and place tools in pouch.

.3 Wet surface of insulation in lower section of bag and any exposed end of asbestos insulation remaining on pipe with Amended Water.

.4 Insert nozzle of HEPA filtered vacuum cleaner into bag through valve and evacuate air from bag.

.5 Seal valve cover on valve Glove Bags.

.6 Seal closure strip.

.7 Wash top section of Glove Bag and tool pouch thoroughly.

.8 Undo securing straps, unfasten zipper and carefully move bag to new section of pipe.

.12 To remove bag after completion of insulation removal operation:

.1 Wash inner surface of Glove Bag.

.2 Wash and place all tools in one hand (glove), pull hand out inverted, twist to create a separate pouch, tape inverted hand at two separate locations 25 mm apart so as to seal pouch.

.1 Remove inverted hand and tools by cutting between the two tape seals.

.2 Place inverted hand pouch and tools into the next clean Glove Bag to be used or into a water bucket, open pouch underwater and clean tools.

.3 Wet surface of insulation in lower section of bag and any exposed end of asbestos insulation remaining on pipe with Amended Water.

.4 Insert nozzle of HEPA filtered vacuum cleaner into bag through valve and evacuate air from bag.

.5 Seal valve cover on valve Glove Bags.

.6 Seal closure strip if equipped with one. Twist bag at tapered point and secure with tape.

.7 Pull an Asbestos Waste Container over Glove Bag before removing from pipe.

.1 Undo straps and unzipper, or cut upper portion of single-use Glove Bag.

.2 Seal Asbestos Waste Container with tape.

.8 Ensure pipe is clean of all residue after removal of Glove Bag. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA vacuum or wipe with wet cloth.

.13 Seal all surfaces of freshly-exposed pipe with Post Removal Sealer.

.14 Cover exposed ends of any remaining asbestos insulation with canvas and lagging using

Type 2 Procedures.

3.4 Clean-Up and Dismantling

.1 Clean and remove from Abatement Work Area:

.1 Equipment and tools.

.2 Temporary lighting if used.

.3 Polyethylene seals from HVAC systems.

.2 Place polyethylene sheeting, drop sheets, seals, tape, clothing and other contaminated waste in asbestos waste containers, wet wipe and place in second asbestos waste container.

.3 Clean Abatement Work Area with HEPA vacuums or wet wiping/mopping.

.4 Seal openings in HEPA vacuums.

.5 Proceed with the dismantlement of all barricades, etc. following receipt of authorization to proceed from the Asbestos Abatement Consultant.

.6 Remove barricades, fencing, caution tape, signs, etc.

3.5 Waste and Material Handling

.1 Refer to Section 02 81 00.

3.6 Re-Establishment of Items

.1 Upon completion of work:

.1 Move all items that were removed from Abatement Work Area prior to work, back into same location within Abatement Work Area.

.2 Remove tags and locks from electrical panels and re-energize equipment and items.

.3 Enable building air handling systems.

.4 Clean and vacuum Abatement Work Area.

END OF SECTION

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PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for demolition work shown on the drawings, described herein, or as necessary to complete the work.

.3 Before commencing demolition, contact utilities and authorities having jurisdiction. Carry out disconnections and cappings to their requirements employing tradesmen licensed for this work. Pay inspection and service fees.

.4 This includes co-ordinating the disconnection and capping of services, as follows:
- .1 Sanitary Sewers
- .2 Storm sewers
- .3 Water service
- .4 Electric power connections
- .5 Telephone connections
- .6 Cable TV connections
- .7 Gas service

1.2 Related Work Under Other Sections

None

1.3 Standards

.1 To Ontario Fire Code, Part 8, Demolition, including:
- .1 Shutting off and capping services
- .2 Providing fire watches as required
- .3 Management of combustible salvage, waste and rubbish
- .4 Protection of persons and properties
- .5 Maintenance of operable fire protection equipment
- .6 Maintenance of fire fighters access
- .7 Provision of fire extinguishing equipment
- .8 Maintenance of existing and/or temporary exits

.2 To CSA-S350 'Code of Practice for Safety in Demolition of Structures', the Ontario Occupational Health and Safety Act, WHMIS and regulations of authorities having jurisdiction.

1.4 Recording Existing Conditions

.1 After determining demolition methods, determine area of possible vibration. Carefully inspect beyond those adjacent areas. List potential damage spots [i.e. existing cracks, exposed glass, etc.] and photograph each for record purposes before starting work.

1.5 **Protection**

.1 Fully protect adjacent property and ensure free safe passage at all times.

.2 Provide necessary hoardings, braces, shoring, underpinning, railings, temporary covers, covered passageways, ramps, warning signs, visual and audible signals, as required to prevent movement, settlement or collapse of any adjacent services, sidewalks, driveways, trees, building or building parts.

.3 Protect the public and others at all times. Be liable for any damage and replace, repair, or make good immediately.

.4 Where sheet, trowelled or sprayed-on asbestos is being disturbed, provide protective equipment and use protective measures required by the Ontario Occupational Health and Safety Act, latest regulations and owner's requirements see instructions to bidders.

PART 2 - PRODUCTS

N/A

PART 3 - EXECUTION

3.1 **Standards**

.1 Carry out demolition and reconstruction operations in accordance with the Canadian Construction Safety Code. Obtain and pay for any special permits. Do not use explosives or smashing type of mechanical wrecking devices without the Architect's written approval.

3.2 **Preparation**

.1 **Salvage Items:**

.1 Carefully remove the following materials and equipment; store and protect as directed by the Owner.

.1 See Drawings.

.2 Stack whole reusable items separately and clear of demolition operations. The Architect retains ownership of these items until inspected. Dispose of these items as directed by the Architect. Remove materials declared surplus from site and deliver balance as directed.

.3 Dispose of demolished, broken and non-reusable materials immediately from the site of operations. Remove contaminated and dangerous materials from the site immediately and dispose in a safe manner to minimize all dangers at the site or at disposal locations.

.4 Disconnect, cap and seal electrical, telephone, cable TV, sewage, drainage, water and gas lines in accordance with the rules and regulations of the authorities having jurisdiction; employ tradesmen licensed to carry out this work.

.5 Clearly paint, mark and post warning signs on lines to remain in service and promptly repair any damage to maintain active service.

3.3 Demolition Operations

.1 Carry out demolition work shown on the drawings in a systematic manner from roof to final grade as necessary to accommodate remedial, reconstruction or new work. Ensure work is supervised by an experienced, competent foreman at all times. Work on each floor level must be complete before commencing work on the supporting structure. If any part of the work becomes unstable, temporarily shore and support to prevent collapse.

.2 Demolish foundations and piers, to a minimum of 150 mm (6") below finish floor slab and make good floor slab flush with existing finished slab.

.3 Small pieces of concrete and masonry may not be used to back fill. Do not use organic or metallic materials for back fill.

.4 At the end of each days work, leave site in a safe condition so that no part is in danger of collapse. Do not stack salvaged materials or debris liable to overload any part of the structure.

.5 Minimize dust during demolition. Keep dust dampened at all times.

.6 Withdraw or flatten projecting nails as work proceeds.

.7 Do not sell or burn materials on site.

.8 Remove organic, metallic, contaminated or dangerous materials from the site and ensure safe disposal.

3.4 Completion

.1 Remove debris daily; use approved transport vehicles only to their safe load capacity and clean away spillage immediately. On completion, clean exposed surfaces and adjacent areas ready for reconstruction operations. Remove tools, equipment, trash, dust and dirt from the site of operations and leave in a broom-clean condition.

-END-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for cast-in-place concrete as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 03350: Concrete Finishing, [co-ordinating work with this section.]

.2 Section 06100: Rough Carpentry, [co-ordinating work with this section.]

.3 Division 15: Mechanical, [install all mechanical inserts.]

.4 Division 16: Electrical, [install all electrical inserts.]

1.3 Applicable Codes and Standards

.1 Comply with requirements of Ontario Building Code, Ontario Occupational Health and Safety Act and municipal building By-laws and Regulations.

.2 Except where modified by the drawings, conform to the following:

STANDARD	TITLE
ACI 301-20	Tolerances of Concrete Construction.
CAN/CSA-A23.1-2014	Concrete Materials and Methods of Concrete Construction.
CAN/CSA-A23.1-1S1-2014	
CAN/CSA-A23.1-1S2-2014	
CAN/CSA-A23.2-2014	Methods of Test for Concrete.
CAN/CSA-A23.3-2014	Design of Concrete Structures for Buildings.
ASTM A616/A615M	Billet-Steel Bars for Concrete Reinforcement.
ASTM C778	Portland Cements.
ASTM C260	Air-Entraining Admixtures for Concrete.
ASTM C494/C494M-19e1	Chemical Admixtures for Concrete.
ASTM C494	Guidelines for the use of Admixtures in Concrete.
CRSI	Manual of Standard Practice.

1.4 Inspection and Testing

.1 Contractor to arrange for material testing and compaction tests of subgrade and granular base courses in accordance with Division 1: General Requirements and disburse for cash allowance.

.2 Notify testing agency of concreting schedule.

1.5 Certificates

.1 Submit to Architect certification showing that plant, equipment, and all materials to be used in concrete are in accordance with CAN/CSA-A23.1-2014, Concrete Materials and Methods of Concrete Construction, CAN/CSA-A23.1S1-2014, CAN/CSA-A23.1S2-2014 and that mix design is adjusted to prevent alkali aggregate reactivity problems.

1.6 Co-ordination and Co-operation

.1 Co-operate with other trades on concrete related work. Give other trades all information regarding materials or items supplied by this trade and affecting work of other trades.

.2 Leave chases, openings and slots as required. Build in hangers, anchors, sleeves and accessories supplied by others.

.3 If not noted on the structural drawings, obtain the Architect's approval for cutting holes in concrete for pipe or duct passage.

.4 To ensure proper levelling, provide dry-pack concrete grout under beam and column bearing plates.

.5 Prior to placing concrete footings or skim slabs, give the Architect's timely notice for inspection of sub-soil by a soils engineer. Do not place concrete until approval received.

.6 Give the Architect minimum 24 hours notice of time when reinforcement will be completed and ready for inspection.

1.7 Delivery, Storage and Handling

.1 Deliver and store materials undamaged in dry area, stacked to allow free air circulation. Store materials in accordance with CAN/CSA-A23.1-2014.

.2 Deliver items to site in the largest practical sections and tag or mark (chalk only) items for identification.

.3 Store reinforcing steel on racks or skids. Protect from dirt or other materials. Maintain steel in the fabricated form.

.4 Store forms off ground and provide adequate support to prevent warping or distortion. Protect from contamination by oil, grease, water, earth, etc.

.5 Replace all items received in damaged condition and/or as deemed to be defective by the Architect.

1.8 Examination

.1 Examine all surfaces and conditions upon which the work of this section depends. Report all discrepancies to the Architect.

.2 Examine all drawings, showing work of other trades on which this work is in any way dependent, and report to the Architect any errors or discrepancies affecting this work.

1.9 Cold Weather Concreting

.1 Comply with CAN/CSA-A23.1-2014. Take necessary precautions when air temperature is at or is likely to drop below 5 degrees C (41 degrees F). Provide

temporary plant and equipment for heating concrete materials and forms. Maintain the proper temperature and humidity of the concrete during curing.

1.10 Hot Weather Concreting

.1 Comply with CAN/CSA-A23.1-2014. Take necessary precautions when air temperature exceeds 26 degrees C (78 degrees F).

1.11 Special Protection

.1 Provide temporary protection to interior of building during all times that the existing weatherproof surface has been disturbed prior to installing concrete.

.2 Prevent damage to building surfaces, landscape, asphalt paving, curbs, etc.

.3 Keep traffic off newly concreted areas until concrete has fully cured.

1.12 Shop Drawings

.1 Submit [4] copies of shop drawings, placing diagrams, bar lists and erection drawings, clearly showing the signed stamp of a professional structural engineer registered in Ontario.

PART 2 - PRODUCTS

2.1 General

.1 **Strength:** Concrete shall have minimum 28 day compressive strengths as follows:

.1 30 MPa for all column footings, structural slabs, beams, columns and piers.

.2 25 MPa for wall footings, slabs on grade.

.2 **Air Entrainment:** Concrete shall have percentages of air entrainment as follows:

.1 5%-8% for all concrete subject to de-icing chemicals.

.2 3%-6% for exterior concrete subject to freezing and thawing.

.3 3% maximum for interior concrete subject to freezing and thawing.

2.2 Materials

.1 **Portland Cement:** To ASTM C150/C150M, Type 10, Normal.

.2 **Mixing Water:** To CAN/CSA-A23.1-2014.

.3 **Fine aggregate:** To CAN/CSA-A23.1-2014, graded within to following limits.

.1 100% by weight passing a 10 mm ($^3/_8$") sieve.

.2 90% by weight passing a #4 sieve and not more that 8 - 30% by weight passing a No. 50 sieve.

.4 **Coarse Aggregate:** Crushed stone or gravel: To CAN/CSA-A23.1-2014. Maximum size 19 mm ($^3/_4$"); for delamination repairs, maximum size 10 mm ($^3/_8$").

.5 **Air-Entraining Agent:** To ASTM C260.

Acceptable Products: Or Approved Equal

Conchem	'PROTEX AES'
Grace	'Darex AEA'
Master Builders	'MBVR'
Sika	'Sika AER'
Sternson	'NVR'
W. R. Meadows	'Sealtight AEA'

.6 **Water-reducing Agent (Superplasticiser), Non-retarding:** To ASTM C494.

Acceptable Products: Or Approved Equal

Conchem	'PDA 25XLR'
Grace	'WRDA-82'
Master Builders	'Pozzolith' (N)
Sika	'Sikament 300'

.7 **Curing Compounds:** To Section 03350: Concrete Finishing.

.8 **Epoxy Materials:** Reinforcement coating and new concrete bonding.

Acceptable Products: Or Approved Equal

Cappar	'Capbond E'
Conchem	'Pro Bond'
CPD Services	'2C Polysulphide Epoxy Adhesive'
Sika	'Sikudur 35 Hi Mod LV'

.9 **Polymer Materials:** To ASTM D8505/D8505M-23

.1 Pre-packaged, pre-mixed polymer bonding material.

Acceptable Products: Or Approved Equal

Cappar	'Acrylic Latex No. 12'
CC Chemicals	'Acrylic conc Adhesive'
Conchem	'XL Bond'
CPD Services	'Styrene Butadiene & 20 min. set
Master Builders	'Acryl-Set'
Sika	'Sikatop 122'

.2 Use one of the foregoing and include oven dried aggregates in accordance with the manufacturers' directions. Use products of one manufacturer only.

.10 **Pre-mixed Non-shrink Grout:** To ASTM C1107. Minimum strength 40 MPa at 28 days. Maximum allowable shrinkage 0.4 percent. If required in this section.

Acceptable Products: Or Approved Equal

CC Chemicals	'In Pakt' or 'Supertop' [no forms]
Conchem	'Super Grout 1000'
CPD Services	'Non-shrink Construction Grout'
Master Builders	'Master Flow 713'
Sternson	'Ferrogrout 939'
W. R. Meadows	'V-3 Grout'

.11 **Premoulded Joint Filler (Isolation/Expansion Joints):** Bituminous impregnated fibre to ASTM D994/D994M-2022, thickness and depth, indicated in this division and/or as shown on drawings.

Acceptable Products: Or Approved Equal

CPD Services	'Asphalt Fibre Board'
Sternson	'Sternboard'
W. R. Meadows	'Sealtight Fibre Joint'

.12 **Waterstops:** Extruded poly vinyl chloride water-stops to ASTM D8530 Type I and III, thickness and depth, indicated in this division and/or as shown on drawings.

Acceptable Products: Or Approved Equal

Sternson	'Durajoint'
W. R. Meadows	'Sealtight P.V.C.- Premium Grade'

.13 **Absorptive Cover:** Burlap cloth made from jute or kenaf, weighing approximately 300g/m^2 (9 oz/sq yd), complying with ASTM C-171/E-96.

.14 **Curing Membrane:** To ASTM C171, Type 1.

Acceptable Products: Or Approved Equal

Waterproof Paper	
CIL [Plastics]	'0.15 mm (6 mil) polyethylene film'
Burlap-Polyethylene Sheet	

.15 **Dampproof Membrane:** 0.152 mm (6 mil) black polyethylene sheet.

.16 **Vapour Barrier Film:** To ASTM 1643, Type 1.

Acceptable Products: Or Approved Equal

CIL [Plastics]	'0.15 mm (6 mil) polyethylene film'

.17 **Vapour Barrier Tapes:**

Acceptable Products: Or Approved Equal

Kendall	'Polyken No. 827'
3M	'Scotch Brand 483'

.18 **Steel Reinforcing Bars:** To applicable ASTM A616/A615M series. Use deformed bars, unless noted otherwise on the drawings. Provide bar supports as required by Manual of Standard Practice of the Reinforcing Steel Institute of

Ontario. For exposed concrete locations, use plastic, precast concrete or plastic protected steel supports. Fabricate reinforcing to CAN/CSA- A23.1-2014.

.19 **Welded Steel Wire Fabric:** To ASTM A616/A615M for bars, ASTM A185 for welded steel wire mesh, 152 x 152 mm (6" x 6"), MW18.7/MW18.7 (6/6), and ASTM A1064/A1064M-10e1 for deformed steel wire mesh, chairs, bolsters, bar supports spacers, adequate for strength and support of reinforcing construction conditions.

.20 **Welded Deformed Steel Wire Fabric:** To ASTM A1064/A1064M-10e1 [for thin slab use].

.21 **Formwork:** To CAN/CSA-S269.1-2021

.1 Use new materials at start of work except where forms are required for rough unexposed concrete such as foundations when sound used materials may be substituted.

.2 **Plywood:** To CSA-O121 carrying COFI exterior stamp, Douglas fir, SIS with sealed edges.

.3 **Tubular Column Forms:** Round, spirally wound laminated fiber forms, internally treated with release material. Spiral of form must not show in hardened concrete surface.

.4 **Form Release Agent:** Chemically active release agents containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing concrete from sticking to forms.

Acceptable Products: Or Approved Equal
W.R. Meadows 'Sealtight-Duogard'

.5 **Ties for exposed concrete:** Threaded, internal snap-off disconnecting type fitted with plastic cones 25 mm (1") dia. x 50 mm (2") deep.

.6 **Plugs for holes left by disconnecting type ties:** PVC plastic with 6 mm ($^1/_4$") set back and of same colour as concrete.

.22 **Falsework:**

.1 Use new materials to CAN/CSA-S269.1-2021 at start of work except where forms are required for rough unexposed concrete such as foundations when sound used materials may be substituted.

.23 **Dovetail Channel Reglets:**

.1 Use new materials at start of work except where forms are required for rough unexposed concrete such as foundations when sound used materials may be substituted.

Acceptable Products: Or Approved Equal
Acrow-Richmond 'Dovetail Anchor Slot'

PART 3 - EXECUTION

3.1 Rejected Work

.1 Deliver only materials conforming to specified requirements. Remove immediately if rejected after delivery.

3.2 Formwork and Falsework Construction

.1 All formwork to comply to CAN/CSA-S269.1-2021.

.2 All falsework to comply to CAN/CSA-S269.1-2021.

.3 Construct formwork and falsework to obtain concrete surface specified.

.4 Make forms tight and flush faced to prevent mortar leakage, fins or panel outlines.

.5 Apply form coating and release agent to contact surface of formwork panels before first use and before each reuse. Seal lumber in forms for architectural concrete prior to use. Apply form coating uniformly to surfaces.

.6 Use internal form ties. Locate ties in a uniform pattern to the Architect's approval.

3.3 Removal of Formwork

.1 Be responsible for structural safety before placing, during placing and after approval of forms. Retain forms and supporting shores in place until members are self-supporting and superimposed construction loads may be applied without excessive deflection or distortion. Retain formwork, exclusive of shoring, until concrete attains 75% of the specified 28 day strength.

3.4 Isolation/Expansion Joints

.1 Install isolation (expansion) joints in new concrete at 9 m (30 ft) on centre in each direction, between walls/footings/columns/piers and slabs-on-grade and/or as shown on drawings. Cast joints in place. Sawcut joints are not acceptable.

.2 Install pre-molded joint filler for each joint in single piece for depth and width required for joint, unless otherwise required by Architect. When more than one piece is required for a joint, fasten abutting ends and hold securely to shape by stapling or other method of positive fastening.

.3 Locate and form isolation joints as indicated. Install pre-molded joint filler.

.4 Use 12mm ($^1/_2$") thick pre-molded joint filler to separate slabs-on-grade from vertical surfaces and extended joint filler from bottom of slab to within 12mm ($^1/_2$") of finished slab surface unless otherwise noted.

3.5 Control Joints To Section 03350: Concrete Finishing.

3.6 Water-stops

.1 Install water-stops to provide a continuous water seal. Do not distort or pierce water-stop in such a way as to hamper performance. Do not displace

reinforcement when installing water-stops. Use equipment to manufacturer's requirements to field splice water-stops. Tie water-stops rigidly in place.

.2 Use only straight heat sealed butt joints in the field. Field weld all corners and intersections.

3.7 Epoxy Materials

.1 Mix and apply epoxy materials for reinforcing in accordance with the manufacturers printed instructions.

.2 Brush or spray application is acceptable.

.3 Ensure pot life and tack free times at various temperatures is strictly observed. Mix and apply materials in quantities that can be applied within the specified pot life and follow by concreting while the epoxy is in the proper condition.

3.8 Placement of Reinforcing

.1 Store reinforcement on racks and skids to protect from dirt and to retain the fabricated form.

.2 Do not field bend reinforcing.

.3 Before placing, remove loose scale, dirt, oil or other coatings liable to impair bond. Place reinforcement within specified tolerances and secure in position with chairs, spacers and hangers.

.4 Fabricate, place and cover reinforcing steel to CAN/CSA-A23.1-2014, Section 12.

3.9 Inserts

.1 Set sleeves, ties, anchor bolts, pipe hangers, inserts, and form openings in concrete floors and walls, as required by other trades. Sleeves, openings, etc., greater than 100 x 100 mm (4" x 4") and not indicated on structural drawings require the Architect's approval.

.2 Ensure sleeves, ducts, pipes or openings do not pass through joists, beams, or columns; except where expressly detailed on structural drawings or as approved by the Architect.

.3 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain the Architect's approval of modifications before placing concrete.

.4 Check locations and sizes of sleeves, openings, etc., shown on structural drawings against architectural, mechanical and electrical drawings.

.5 Set inserts according to design drawing as required by non-destructive method for testing concrete.

.6 **Anchor Bolts:**

.1 Place anchor bolts to templates provided by trade supplying anchors prior to placing concrete.

.2 Grout anchor bolts in preformed holes or holes drilled after concrete has set. Formed holes to be at least 100mm (4") in diameter. Drilled holes to be at least 25% larger than diameter of bolts used.

.3 Protect anchor bolts from water accumulations.

.4 Set bolts and fill with approved shrinkage compensating grout.

.7 **Drainage and Weep Holes:**

.1 Form drainage and weep holes.

.2 Install all drainage and weep hole tubes as indicated.

.8 **Dovetail Anchor Slots:**

.1 Install continuous vertical anchor slots with dovetail channel reglets attached to forms where masonry abuts concrete wall or columns.

.2 Install continuous vertical anchor slots with dovetail channel reglets attached to forms at 800mm (2'-8") o.c. where concrete walls are masonry faced.

3.10 Grouting

.1 Grout under steel column and beam bearing plates with non-shrink grout to manufacturer's instructions which result in 100% contact over grouted area. Neatly trowel exposed grout edges.

3.11 Dampproof Membrane/Vapour Barrier Installation

.1 Install polyethylene film on top on compacted granular fill to underside of slab on grade.

.2 Lap joints 150 mm (6") minimum and seal with tape and acoustic sealant.

.3 Extend dampproof membrane/vapour barrier tight to perimeter of foundation walls and other components interrupting continuity of membrane/barrier, lap up membrane/barrier at edge of walls full thickness of slab, seal with tape and sealant.

3.12 Proportioning Concrete

.1 To CAN/CSA-A23.1-2014, Section 14, Alternative 1 Table 11. Design mixes to produce concrete properties designated.

.2 Concrete surfaces subject to foot traffic only; minimum cement content 320 kg/m^3.

.3 Concrete surfaces subject to vehicular traffic; minimum cement content 360 kg/m^3.

.4 Exterior concrete surfaces subject to de-icing and chemical materials: Class A exposure.

.1 Maximum water/cement ratio: 0.45.

.2 Maximum slump at point of discharge: 75 mm ±25 mm (3" ±1").

.3 Maximum nominal aggregate size: 20 mm ($^3/_4$").

.4 Minimum compressive strength: 30 MPa.

.5 Minimum compressive strength for delamination repairs: 30 MPa.

.6 Range in total air content:

.1 7 percent to 10 percent for concrete with 10 mm ($^3/_8$") maximum aggregate

.2 5 percent to 8 percent for concrete with 19 mm ($^3/_4$") maximum aggregate

.5 Use water reducing agent and air entraining agent as directed. If other admixtures are required to produce specific properties, obtain the Architect's written approval before using. Do not use calcium chloride or other admixtures containing chloride.

3.13 Production of Concrete

.1 Use mixed in transit concrete wherever possible.

3.14 Concrete Placement

.1 Thoroughly clean forms before placing concrete.

.2 Cast slabs with top surface level or sloped for drainage as indicated.

.3 Prior to placing concrete, obtain the Architect's approval of form work, placement of reinforcing steel, consolidation of subgrade, placement and consolidation of granular base and finished grades. Notify Architect 24 hours before placing concrete.

.4 Do not pump concrete, unless obtaining approval of equipment and mix.

.5 Convey concrete from mixer to place of deposit so as to prevent separation or loss of materials. Maximum time for the operation is 60 minutes. Deposit concrete as close as possible to the final position. Once started, placing must proceed as a continuous operation until the full section is complete.

.6 Place concrete in the final position ensuring that it remains plastic, flows readily between reinforcement, fills forms and surrounds embedded fixtures.

.7 Place in a continuous operation between expansion joints. Clean equipment used for mixing or transporting concrete prior to use. Avoid contamination of concrete with foreign materials.

.8 Consolidate concrete using vibrators or by other approved methods during placing operations. Do not operate a vibrator for longer than 10 seconds in any one location. Work around reinforcement, embedded items, into corners and eliminate air and stone pockets. Ensure that an adequate number of workers are available for this operation.

.9 Ensure finished concrete is dense, uniform, free of air holes or honeycombs and that no segregation of aggregate and cement paste occurs.

.10 Ensure reinforcement and inserts are not disturbed during placement of concrete.

.11 In locations where new concrete is dowelled to existing work, drill holes in existing work. Place steel dowels of deformed steel reinforcing bars and pack solidly with shrinkage compensating grout to positively position and anchor dowels.

.12 For slab-on-grade pour concrete, and work into mesh and around reinforcing. Lift reinforcing as required to ensure proper location.

.13 Accurately form all openings in concrete required by Division 15: Mechanical and Division 16: Electrical. Refer to those Divisions and the Mechanical and Electrical drawings for sizes and locations. Confirm with those trades the specific methods of forming. If required make allowance in size of openings for future insulation of items.

3.15 **Finishing** To Section 03350: Concrete Finishing

3.16 **Curing** To Section 03350: Concrete Finishing.

3.17 **Surface Patching** To Section 03350: Concrete Finishing.

3.18 **Clean-up**

.1 Daily: scrape up and remove concrete droppings and debris.

.2 At completion: remove formwork, accessories, equipment and debris. Leave premises in a 'broom-clean' condition.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for all concrete finishing as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Works Under Other Sections:

.1 Section 03300: Cast-in-Place, [provide concrete finishing]

1.3 Standards

.1 Comply with requirements of Ontario Building Code, Ontario Occupational Health and Safety Act and municipal building By-laws and Regulations.

.2 Except where modified by the drawings, conform to the following:

STANDARD	TITLE
ACI 301-20	Tolerances of Concrete Construction.
ASTM C150/C150M	Portland Cements.

1.4 Qualifications

.1 Work under this section to be carried out by a company with minimum (5) years experience on projects of similar size and character and must be a member of the Concrete Finishing Contractors Association of Canada.

1.5 Examination

.1 Examine all surfaces and conditions upon which the work of this section depends. Report all discrepancies to the Architect.

1.6 Co-ordination and Co-operation

.1 Co-operate with other trades on concrete related work. Give other trades all information regarding materials or items supplied by this trade and affecting work of other trades.

.2 Examine all drawings, showing work of other trades on which this work is in any way dependent, and report to the Architect any errors or discrepancies affecting this work.

1.7 Special Protection

.1 Protect work of other sections while work of this section is being performed.

.2 Do not pile or store materials on slabs, nor wheel or handle materials thereover until design strength of concrete is verified.

.3 Protect finished floors as soon as possible against damage by traffic and other trades.

PART 2 - PRODUCTS

2.1 Materials

.1 **Portland cement:** To ASTM C150/C150M, Type 10, Normal.

.2 **Fine aggregate:** To CAN/CSA-A23.1-2014, graded within to following limits.

.1 100% by weight passing a 10 mm ($^3/_8$") sieve.

.2 90% by weight passing a #4 sieve and not more that 8 - 30% by weight passing a No. 50 sieve.

.3 **Mixing water:** To CAN/CSA-A23.1-2014.

.4 **Saw Cut Control Joint Sealant:** Two component epoxy urethane, catalyst cured self-leveling sealant. Prime damp joints with recommended primer.

Acceptable Products: Or Approved Equal

Grace	'Daraweld-C'
Master Builders	'Embeco Mortar'
W. R. Meadows	'Bonoflex'
Sternson	'Loadflex'

.5 **Interior Curing Compounds:** Clear liquid chlorinated rubber to ASTM C309, Type 1. No darkening or discolouration of concrete surfaces acceptable; compatible with, and not impairing bond of, superimposed material.

Acceptable Products: Or Approved Equal

Conchem	'Triple Seal'
CPD Services	'Cure and Seal'
Master Builders	'Master-Kure CR' [clear]
Sternson	'Florseal' (exceeds ASTRA C-309)
Meadows	'CR-26'
CC Chemicals	'Acrylic curing compound'

.6 **Special Sealing Compounds:** Clear liquid concrete surface hardware as indicated drawings and/or specified within.

Acceptable Products: Or Approved Equal

W.R. Meadows	'Curehard'
Sternson	'Sealhard 400'

.7 **Resurfacing Bonding Agents:** Latex emulsion for use as a bonding agent for patch and crack repairs to concrete slab.

Acceptable Products: Or Approved Equal

W. R. Meadows	'Sealtight - Bodlok'
Sternson	'Surfacrete Concentrate'

.8 **Grout Mixes:**

.1 Patching and Crack Filler [for repairs] to same colour, texture, strength and finish as adjacent surfaces.

1 part portland cement
2 parts fine concrete sand
recommended latex water additive.

.9 **Curing Membrane:** To ANSI/ASTM C171 Type 1 .

Acceptable Products: Or Approved Equal
Waterproof paper
CIL [Plastics] '0.15 mm(6 mil) polyethylene film'
Polyethylene coated burlap

PART 3 - EXECUTION

3.1 **Finishing Interior Concrete Slabs**

.1 Conform to CAN/CSA-A23.1-2014, and applicable specifications of the Concrete Floor Contractors Association. Co-ordinate with Section 03300: Cast-in-Place Concrete for finishing of interior concrete floor slabs.

.2 After rough levelling of monolithically placed concrete floors, fine grade concrete to screed lines using straight edge, strike off, darbys, mechanical floats, trowels before free moisture (bleeding) rises to the surface. Finish, supply and apply all specified curing compound and hardness where indicated on drawings and/or specified herein.

.3 This section to be responsible for control and supervision of placing and finishing of the work.

.4 Screed concrete to correct elevations, slopes, and recesses, etc. as shown on drawings.

.5 Complete all required edging prior to floating. Ensure all coarse aggregates are covered and that edger does not leave too deep an impression in top of slab. Do not use edging tool at control joints.

.6 Darby or bull float surface, smoothing and leveling, concrete. Allow bleed water and sheen to disappear.

.7 Float surface with steel trowel to a smooth even finish, when concrete has hardened enough for a man to leave only slight foot prints on surface.

.8 Do not bring water and fines to surface by over floating. Where longer floating is required, repeat floating operation after sheen has disappeared and concrete has further hardened.

.9 Unless otherwise specified do not apply water to the concrete surface to assist in finishing operations.

.10 Apply hardener/sealing/curing compounds where specified and to manufacturer's printed directions.

.11 Where floor drains occur, floor shall be level around walls and have minimum 6 mm per 300 mm ($^1/_4$" per foot) uniform pitch to drains, unless indicated otherwise.

.12 Finish floors to a hard, dense, level surface free from pinholes, imperfections and trowel marks.

3.2 Curing Interior Concrete

.1 Cure concrete surfaces not in contact with forms by applying curing-sealing compound according to manufacturers printed instructions immediately after disappearance of surface water sheen. The applied material must not discolour surfaces and be compatible with and not impair level of any material laid on the surface.

.2 Immediately after placing, protect concrete from premature drying, sunshine exposure, excessively hot or cold temperature during proper hydration of cement in the concrete. Keep moisture loss to a minimum.

3.3 Isolation Joints

.1 **Interior Concrete:** To Section 03300: Cast-in-Place Concrete.

3.4 Control Joints

.1 Provide all sawcut and/or tooled control joints as indicated on drawing and/or specified herein.

.2 Continue reinforcing uninterrupted through joints at 3 m (10 ft) on centre in each direction and or as shown on drawings.

.3 Commence sawing as soon as concrete has hardened sufficiently to prevent excessive raveling. Ensure that saw does not touch or disturb reinforcing steel. Sawcuts shall not vary more than 12 mm ($^1/_2$") from true joint alignment. Power saw cut 6 x 12 mm ($^1/_4$" x $^1/_2$") deep control joints directly along centre line of construction joints in floor slabs-on-grade. Power saw cut control joints of from 3 m ($^1/_8$") to 5 mm ($^3/_{16}$") wide x depth equivalent to from $^1/_4$ to $^1/_3$ slab thickness, but no less than 32 mm ($1^1/_4$") deep in slabs-on-grade. Clean joints after cutting. Fill to within 6 mm ($^1/_2$") of surface with dry silica sand. Fill remaining voids of following exposed joints with saw cut joint sealant;

.1 Joints in floor surfaces to remain exposed.

.2 Joints in floor surfaces to receive thin film type coatings.

3.5 Crack and Patch Repair

.1 Repair with specified products to satisfaction of Architect.

3.6 Clean-up

.1 Daily: scrape up and remove concrete droppings and debris.

.2 At completion: remove formwork, accessories, equipment and debris. Leave premises in a 'broom-clean' condition.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for installation of unit masonry, reinforcing and other components as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 05120: Structural Steel, [co-ordinating work with this section.]

1.3 Applicable Codes and Standards

.1 Technical Builders Bulletins, Section 20 'Above Grade Masonry'.
.2 Ontario Building Code 'Plain and Reinforced Masonry'.
.3 CAN/CSA-S304-2019 'Masonry Design for Buildings'.
.4 CAN/CSA-A370-2019 'Connectors for Masonry'.
.5 CAN/CSA-A371-2019 'Masonry Construction for Buildings'.
.6 CAN/CSA-A405-2019 and Brick Institute of Americas Standards "Design and Construction of Masonry Chimneys and Fireplaces"

.7 ULC fire-rated assemblage requirements.

1.4 Co-ordination and Co-operation:

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

1.5 Inspections and Tests

.1 Inspect previously prepared bearing surfaces. Reject unsatisfactory surfaces upon which masonry depends. Commencement of work implies acceptance of the bearing surface.

.2 If suppliers or manufacturers cannot provide an acceptable recent independent test report [i.e. within the last three [3] years] attesting to the materials specification, obtain and pay for the required tests.

.3 The Architect shall be the sole judge as to acceptability of work. If any work is rejected, promptly remove from site and replace with proper materials and workmanship as required. Pay for any tests required to determine cause of failures.

1.6 Delivery Storage and Handling

.1 Handle and store mortar materials to CAN/CSA-S304-2019 in a dry state with manufacturer’s seals and labels intact.

.2 Stack units, strapped to delivery pallets, clear of ground and under clean and dry weathertight cover.

1.7 **Protection**

.1 Protect stored materials against damage. Remove rejected or damaged materials from site.

.2 Protect surrounding surfaces and work of others. Install temporary protective covers, nosings, etc. Remove before final inspection.

.3 During construction and until completed and protected by flashings or caps, keep masonry work, particularly cavities, dry by using waterproof, non-staining coverings extending over and down side surfaces to protect walls and mortar cure from wind-driven rain. Maintain wall cavities free of mortar droppings to prevent bridging and to ensure drainage. Leave temporary clean out openings at base of cavity and afterwards reinstate when mortar cleaned.

.4 Protect completed work from marking or other damage, particularly from overhead mortar droppings.

.5 Provide temporary protection to interior of building existing weatherproof surface disturbed prior to installing new masonry.

.6 Provide adequate temporary bracing of new and existing masonry work during construction until permanent lateral support in place.

PART 2 - PRODUCTS

2.1 **Materials**

.1 **Mortars:**

.1 **Cement** - CAN/CSA-A5 - 'Portland Cement'.

.2 **Cement -** CAN/CSA-A8 - 'Masonry Cement'

.3 **Sand** - CSA -A82.56 - 'Aggregate for Masonry Mortar'.

.4 **Water** - Drinking quality.

.5 **Lime -** Hydrated Lime to ASTM C207 and ASTM C5

.6 **Lime Putty -** Soak Hydrated Lime not less than 12h in water.

.7 **Plasticizer:** (for structural purposes)

Acceptable Products: Or Approved Equal

Master Builders	'Omicron'
Sternson	'Sterad 300'

.8 **Mortar Colours** - Non-fading, non-staining, lime-proof metallic oxide pigments.

Acceptable Manufacturers: Or Approved Equal

Northern Pigment

.2 **Mortar Mixes:**

.1 **Non-staining Mortar [for above grade-grey]**
Type 'S': to CSA -A179 [12.5 MPa]
1 part cement
$^1/_2$ part lime putty
4-$^1/_2$ parts sand
Plasticizer to manufacturers directions

.2 **Pointing Mortar [for repairs]:**
1 part cement
$^1/_8$ part lime putty
3 parts sand [carefully selected to match existing colour]

.3 **Non-shrink Grout [for inserts, bearing plates, etc.]:** Pre- mixed, minimum strength 4 MPa at 28 days.

Acceptable Products: Or Approved Equal

C.C. Chemicals	'In Pakt'
CPD Services	'Non-shrink Grout'
Master Builders	'Masterflow 713'
Sternson	'Ferrogrout'
Meadows	'U-3'

.3 **Handling Mortar:** Prepare only sufficient mortar usable within one hour of mixing. Wash out mixing box, transport boards, mixing and handling tools between each load. Add only enough water to maintain mix at a stiff workable consistency.

.4 **Masonry Reinforcement, Ties and Concrete Block Ties:**

.1 **Single Wythe Concrete Block Reinforcement:** To CAN/CSA-A370 and A371; hot dipped galvanized ladder type 4.76 mm ($^3/_{16}$") side rods and 4.76 mm ($^3/_{16}$") cross rods, with preformed corner pieces.

Acceptable Products: Or Approved Equal

Blok-Lok	'Blok-Lok BL30 Extra Heavy Duty'
Dur-O-Wal	'Ladur DW200 Extra Heavy Duty'

.2 **Composite Brick Concrete Block Reinforcement:** To CAN/CSA- A370 and A371,:hot dipped galvanized truss type 4.76 mm ($^3/_{16}$") side rods and 4.76 mm ($^3/_{16}$") cross rods, with preformed corner pieces.'

Acceptable Products: Or Approved Equal

Blok-Lok	'4 wire Blok-Trus BL32 Extra Heavy Duty'
Dur-O-Wall	'Truss Double DW120 Extra Heavy Duty'

.5 **Concrete Block:**

.1 To CAN/CSA-A165.1 with units to match existing including all specialty shapes, from one manufacturer for patching; uniform in colour, shade and texture; test-rated at:

.1 **S/15.0/A:** 75 percent solid for exposed interior block walls.

.2 Provide test reports attesting to the requirements of the specified material.

Acceptable Products: Or Approved Equal

Day and Campbell 'Ty-lon (Limestone Finish)'

Imperial Concrete Block for all patching and matching existing by Santerra Stonecraft, Windsor , ON, 1-888-369-3449

.6 **Face Brick:**

.1 To CAN/CSA-A82.1, Grade SW, Type FBS maximum water absorbtion of 8 percent in 24 hour cold water submersion test and complying with the freeze-thaw test in CAN/CSA-A82.2. Provide a recent or new test report altesting to these requirements. To match existing size, colour, type and texture.

.7 **Weep Hole Vents:** Purpose-made plastic or galvanized steel, designed to drain cavities to exterior by means of a 10 mm ($^3/_8$") sloped tube, spaced horizontally at 600 mm oc (2 ft) in vertical joints at bottom of cavities [i.e. at bearing courses, at shelf angles, and at lintels].

Acceptable Products: Or Approved Equal

Dur-O-Wall 'Weep Holes'
Goodco 'Goodco 'Vents'

Guenette 'No. 20'

.8 **Sheet Membrane Flashing:** 1.5 mm thick, self stick membrane .

Acceptable Products: Or Approved Equal

Henry/Bakor 'Blue Skin TWF'

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

3.2 General

.1 Do all work in accordance with CAN/CSA-A371, Masonry Construction for Buildings and CAN/CSA-A405 (see #6 in 1.3).

.2 Use lightweight concrete blocks for exposed interior surfaces of walls or partitions. Regular weight blocks may be used for concealed surfaces. Lay and point exposed masonry with extreme care as to evenly distribute masonry units

to prevent patches and streaks and to produce a homogeneous surface for painted finish.

3.3 Co-ordination

.1 Co-ordinate masonry work with work of other trades. Obtain and build in fittings supplied by others. Instruct masonry trade to fit work of others, as required.

.2 Distribute units of varying colours and/or textures throughout the wall surface to avoid spottiness in finished surface. Do not use units with colours or textures excessively contrasting with the overall range. Reject chipped, blemished, cracked or defective units.

3.4 Grades, Lines and Levels

.1 Ensure grades, lines and levels are accurate, plumb, square and true to line.

3.5 Coursing

.1 Match existing coursing pattern.

.2 Erect masonry with level, accurately spaced courses.

.3 Align coursing horizontally and vertically.

.4 Take particular care at corners and reveals.

.5 Construct masonry evenly in maximum lifts of 1.5 m (5 ft) per day.

3.6 Tolerances To CAN/CSA-A371, Clause 5.3.1:

.1 **Plumb:** Maximum tolerance of 6 mm in 3 m ($^1/_4$" in 10 ft).

.2 **Level:** Maximum tolerance of 6 mm in 6 m ($^1/_4$" in 20 ft).

.3 **Line:** Maximum tolerance of 6 mm in 6 m ($^1/_4$" in 20 ft).

3.7 Cutting

.1 Lay out masonry work to ensure a minimum of cut units.

.2 Where necessary cut units with approved masonry saw.

.3 Make cuts straight, square and free from chips or breaks.

.4 Reject cuts with fractures on face edge.

.5 Do not install cut units at corners or reveals.

3.8 Beds

.1 Place units on full mortar beds.

.2 Butter ends of units for full vertical joints.

.3 Partially filled beds or partially filled vertical joints are not acceptable.

.4 At end of each days work, securely cover exposed and curing work.

.5 Concrete masonry units to have face shells and their end joints fully filled with mortar, and joints squeezed tight together. Fill webs at cores; to be reinforced and grouted and strike flush at core taking care to prevent mortar from falling into core.

3.9 Joints

.1 As the work proceeds, wipe surface with a rough cloth to remove unsightly mortar stains.

.2 Unless otherwise specified, when mortar is 'thumb-print' hard, tool joints evenly, concave, smooth and straight where exposed to view, strike flush elsewhere or where indicated on drawings or specified herein. Press mortar tight against masonry units on both sides of joints. Remove excess material or burrs left after jointing. Use trowel or rub with burlap bag.

.3 Ensure vertical joints form smoothly into horizontal joints, all uniformly concave approximately 10 mm ($^3/_8$") high.

.4 Throwing mortar droppings into joints, deep or excessive furrowing of bed joints, using mortar that has taken initial set is strictly prohibited. Where adjustment must be made after mortar has started to set, remove mortar and replace with fresh supply.

3.10 Lintels, Sleeves, etc.

.1 Accurately build in lintels, sleeves, ties, frames, plugs, hangers, anchors, plates and other fitments.

3.11 Expansion Joints

.1 As shown on the drawings and as required by CAN/CSA-S304 and OBC.

.2 Accurately construct weather barred reveals with vertical joints plumb and true and as detailed on drawings.

.3 Build horizontal expansion joints to proper clearances.

3.12 Control Joints

.1 As required by CAN/CSA-S304 and OBC: material to suit size and shape of joint as detailed on drawings.

.2 Construct joints in a toothed staggered pattern as detailed on drawings.

.3 As wall is being constructed place soft control joint backer pad into joint (see 2.6) in the longest continuous available lengths.

.4 Clear mortar from joint and prepare for sealing with specified control joint back up rod (see 2.7).

3.13 On Completion

.1 After mortar has cured and if staining has occurred, wash down surfaces as follows. Protect other work during washdown operations.

.1 **For Concrete Block, Brick and Concrete Faces:** Wet surface with clear water. Scrub in a zinc sulphate solution [i.e. zinc sulphate 200 g. to 1 L water] and remove stains with a fibre brush. Thoroughly flush with clean water.

3.14 Clean-up

.1 Carefully rub down finish surfaces and remove stains using a rough cloth and/or fibre brushes. Remove mortar droppings, debris and broken or chipped units.

3.15 Maintenance

.1 Replace or repair any work damaged during construction or warranty period, including removing and neutralizing efflorescence.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for the installation of structural steel framing, anchors, support angles, brackets, loose lintels, etc., as shown on the drawings, described herein or as necessary to complete the work.

1.2 Related Work Under Other Sections

None

1.3 Applicable Codes and Standards

.1 Comply with requirements of Ontario Building Code, Ontario Occupational Health and Safety Act and municipal building By-laws and Regulations.

.2 **Structural steel and joists:** To CAN/CSA-G40.21-2023, as listed in CISC Handbook, 'Code of Standard Practice of Steel Construction'.

.3 **Connections, details and bolting:** To CAN/CSA-S16.1-2019.

.4 **Welding:** To CSA-W59-2018

.5 **Welders:** Approved by the Canadian Welding Bureau under CSA-W47.1-2025.

1.4 Co-ordination and Co-operation:

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

.2 Provide all necessary anchors, templates, sleeves, inserts and accessories required to be fixed to or inserted in the work of other sections and set in place. Inform related sections as to their locations.

1.5 Examination

.1 Examine all surfaces and conditions upon which the work of this section depends. Report all discrepancies to the Architect.

1.6 Delivery, Storage and Handling:

.1 Deliver and store materials undamaged in dry area, stacked to allow free air circulation.

.2 Deliver items to site in the largest practical sections and tag or mark (chalk only) items for identification.

.3 Replace all items received in damaged condition and/or as deemed to be defective by the Architect.

1.7 Shop Drawings

.1 Submit [4] copies of shop drawings, schedules and erection diagrams, clearly showing:

.1 The signed stamp of a professional structural engineer registered in Ontario.

.2 Shop details, cuts, bracing, copes, moment connections, connections, holes, threaded fasteners, rivets and welds. Indicate welds using welding symbols to CSA-W59-M1989. Show type, size, spacing, doubled units, bridging, plates, anchors, anchor bolts, and other fitments.

.3 Erection details, methods, sequence of erection and type of erection equipment and to show correlated erection marks.

.4 Indicate all hot dipped galvanizing.

.5 Requirements by all authorities having jurisdiction, submit calculations and such further proof required to conform to the regulations, codes and by-laws.

PART 2 - PRODUCTS

2.1 Materials

.1 **Structural Steel:** To CAN/CSA-G40.21-2023. Grade 300W for rolled shapes and plates. Grade 350W for hollow structural sections. Steel pipe columns to ASTM A53-77a, Type E or S Grade B, schedule 40 and 80.

.2 **Connectors:**

.1 **Bolts, nuts, and washers:** To ASTM A325.

.2 **Rivets:** To CAN/CSA -G40.21-2023.

.3 **Weld materials:** To CSA -W59-2018.

.4 **Weld Electrodes:** To CSA-W48.1-2006.

.5 **Anchor Bolts:** To ASTM A307.

.3 **Primer:**

.1 **General Primer:** CISC/CPMA 'Primer, Structural Steel, Oil Alkyd Type.'(*for interior steel surfaces*) and/or to CISC/CPMA 'Oil Alkyd type Red Lead, Iron Oxide Primer' (*exterior steel surfaces*).

.2 **Zinc Rich Primer (hot dipped galvanized touch-up work and work specified):** To CISC/CPMA 'Coating, Zinc Rich, Organic, Ready Mixed'.

.4 **Non-Shrink Grout**: Pre-mixed compound; non-metallic aggregate to Section 04211 Paragraph 2.2.6.

Acceptable Products: Or Approved Equal

CC Chemicals	'In-Pakt'
Conchem	'Super Grout 1000'
CPD Services	'Non-Shrink Construction Grout'
Master Builders	'Masterflow 713'
Meadows	'V-3 Pre-Mixed'
Sternson	'M-Bed Standard'
Webster	'Tartan No-Iron'

2.2 **Design Criteria**

.1 All components to be designed in accordance with CAN/CSA-S16.1-M89 and to design loads indicated on drawings.

.2 Use high strength bolts for structural connections between members which are subject to stress reversal or which carry horizontal or axial forces to their supporting columns or beams (friction type connection), unless otherwise shown on drawings.

.3 Welding maybe used to attach connection angles to beam webs, unless otherwise indicated.

2.3 **Fabrication**

.1 Fabricate structural steel to CAN/CSA-S16.1-2007, and to reviewed shop drawings, with Structural Engineers seal and to field dimensions.

.2 Provide loose lintels, wall plates, bearing plates and anchors to relate to other sections as required.

.3 Provide punched hole connectors and anchors as required for attachment to other work.

.4 Reinforce openings in members to maintain full design strength.

.5 Connections shall be bolted or shop welded or field welded.

.6 Fabricate work complete with components required for anchoring, bolting or welding to structure; standing free or resting in frames by welding.

.7 Fabricate items in largest possible sections. Form joints in field by welding.

.8 Fabricate work true to dimensions, square, plumb and level. Joints and intersecting members shall be securely fitted with adequate fastenings. Make finished work with true places set to receive related work of other sections and/or subsequent work of this section.

.9 Fabricate, fit and assemble work in shop where possible.

.10 Fill or Grind exposed welds, smooth and flush. Fill all grind marks and other imperfections ready for prime painting. Finish work free of weld splatter.

.11 Fill open joints, depressions and seams with metallic paste filler or by continuous brazing or welding and grind smooth to true, sharp arises and profiles.

.12 Beam connections shall be adequate to resist the reactions produced by the framing and/or load connections.

.13 Mill bearing plates unless plate is sufficiently flat to give contact bearing between surfaces.

.14 Fabricate structural steelwork which will be architecturally exposed to ensure uniform surfaces and neat joints. Continuously seal as weld connections exposed to exterior conditions. Grind smooth all trade manes and identification marks.

2.4 **Finishing**

.1 **Primed Finish:**

.1 After fabrication thoroughly clean, scrape and remove rust, mill scale, grease and other extraneous material. Solvent clean to SSPC-SP1.

.2 Apply full smooth coat of primer, work primer into corners and open spaces such that all visible and accessible surfaces are fully covered.

.3 Deliver all items to site with primed surfaces undamaged to satisfaction of the Architect.

.4 Do not prime surfaces and edges to be field welded, and friction type connections.

.2 **Hot Dipped Galvanizing:**

.1 After fabrication thoroughly blast clean, scrape and remove rust, mill scale, grease and other extraneous material. Solvent clean to SSPC-SP1.

.2 Prepare work in accordance with ASTM A123-78, ASTM A386-78 and CSA-G164-18-2023

.3 Galvanizing items indicated on drawings.

.4 Galvanize items after fabrication. Where this is not possible, touch up welds with zinc rich primer.

.5 Coating thickness to be 600 g/m^2 (2 oz/sq. ft.)

.6 Where at all possible perform all welding prior to galvanizing.

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

3.2 Erection

.1 Erect, connect and secure members to CAN/CSA-S16.1-2007 and in accordance with reviewed shop drawings and O.B.C.

.2 Provide all necessary temporary supports and bracings.

.3 Pay for all hoisting and lifting of steel members.

.4 Do drilling, cutting and fitting necessary to attach work to adjoining components and surfaces and make it complete.

.5 Use bituminous point, butyl tape or other suitable and approved means, to prevent electrolytic action between, dissimilar metals, metal and concrete or masonry.

.6 Do not oil, soak in oil, grease or lubricate in anyway; high strength bolts, nuts and washers prior to use.

.7 Erect individual members to a tolerance of 1:500.

3.3 Field Changes

.1 Obtain Structural Engineers written permission prior to field cutting or alteration of any member, connector, or altering a detail.

3.4 Completion

.1 Touch up with primer over field-installed items, such as bolts, rivets, welds, burned, scratched or abraded surfaces to Primer sections 2.1.3 and 2.5 above.

.2 Immediately after erection, remove loose scale, rust, oil, dirt, etc., from exposed steel, grind smooth all welds and apply a full bodied coat of primer to same or heavier thickness than shop primer.

.3 Do not remove erection equipment from site until installation has been inspected and accepted in writing by the Structural Engineer.

.4 Remove or conceal trade marks or disfiguring marks on exposed steel surfaces.

3.5 Clean-up

.1 Remove tools, equipment, trash, debris and waste materials from site. Leave 'broom-clean'.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for the installation of rough carpentry shown on the drawings, described herein or as necessary to complete the work.

1.2 Related Work Under Other Sections:

None

1.3 Applicable Codes and Standards

.1 Comply with requirements of Ontario Building Code, Ontario Occupational Health and Safety Act and municipal building By-laws and Regulations.

.2 **Lumber:** Identifiable by the NLGA grade stamp of an agency certified by The Canadian Lumber Standards Accreditation Board.

.3 **Pressure treated wood:** To CAN/CSA -O80 Series. Identifiable by the ULC classification label.

.4 **Lumber fastenings:** To OBC Section 4.3.1 and Part 9.

1.4 Delivery, Storage and Handling

.1 Delivery all materials as specified any defective, damaged, warped material or material deemed to be inferior to the specification by the Architect will be promptly replaced.

.2 All materials shall be storaged and stacked in order to prevent damage from exposure to moisture.

1.5 Samples

.1 Provide 300 mm (12") long sample pieces of all pressure preserved wood components to be exposed to view. The samples will be reviewed by the Architect for colour and quality, the samples will be adjusted until the Architect is satisfied. The accepted samples will serve as a standard for all other work.

1.6 Co-ordination and Co-operation:

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

.2 Provide and install all necessary components specified under this section, required to be fixed to or inset in the work of other sections. Inform related sections as to their locations.

PART 2 - PRODUCTS

2.1 Materials

.1 **Lumber Materials:**

.1 **Lumber:** Eastern White Spruce, Eastern Red Pine, Douglas Fir grade stamped softwood S4S, kiln dried to maximum 19 percent

moisture content, to CAN/CSA-O141 and NLGA Standard Grading Rules for Canadian Lumber, unless shown otherwise.

.2 Lumber for each type of structural component; of same species and grade.

.3 Use machine stress-rated lumber wherever possible to CAN/CSA-O86, Table 53; do not use glued end or finger-jointed lumber for framing.

.4 **Lumber:** To OBC Subsection 9.3.2 and as follows:

LUMBER	**MINIMUM GRADE**
Framing Stud: joists, beams, columns]	Structural No. 1
Board: Floor, wall, roof supports	Standard No. 2
Backing: Furring, blocking, grounds, bucks	Standard No. 2
Roof: Cants, curbs, nailers, sleepers, pressure treated	Standard No. 2

.2 **Plywood Blocking:** Exterior grade Douglas Fir Plywood, To CAN/CSA-O121, sheathing grade.

.3 **Building Paper:** To CGSB 51.32 laminated type.

.4 **Vapor Barrier:** Polyethylene Film; to CGSB-51.34, Type 2, 6 mil thick.

.5 **Adhesive:** To CGSB-71.26, cartridge loaded.

.6 **Fastenings and Hardware:**

.1 Spiral or annular grooved nails, spiral spikes or heavy duty staples; to OBC Subsection 9.23.3.

.2 For exterior applications, interior high-humidity areas and in preservative treated applications; hot dip, galvanized fastenings to CAN/CSA-G164.

.3 For other sight-exposed fasteners and hardware; primer paint coating to CGSB-1-GP-181M.

.4 **Specialty hardware types:**

.1 **To hollow masonry and gypsum board walls:** Toggle type bolts.

.2 **To solid masonry and concrete surfaces:** Expansion shield with lag screw, or lead plug with wood screw.

.3 **To structural steel:** Bolts through drilled holes,
OR
.3 **To structural steel:** Welded stud bolts,
OR
.3 **To structural steel:** Power driven, self-tapping screws.

.5 **Screws:** To be stainless steel and/or brass with flat countersunk heads, of length and size to ensure positive fastening or as noted on drawings.

.6 **Expansion Shields:** Lead shield type.

.7 **Surface-applied Wood Preservatives (for exposed cut surfaces):** To be copper naphthenate solutions containing a minimum of 2% copper. Use all manufacturers precautions in using the products.

.1 **For exterior paint, stained or natural finishes on air exposed lumber:** To manufacturers recommendations.

Acceptable Products:

Hickson	'Wolman (Cedar tone)'

.2 **For interior and/or exterior concealed or covered lumber as specified:** To manufacturers recommendations.

Acceptable Products:

Osmose	'Pentox Green'
Solignum	'1-4-2, 1.35'

.8 **Pressure Preservatives:** To CAN/CSA-O80 P5 Series, water-borne preservatives vacuum pressure impregnated and CAN/CSA-O80 Series in general.

.1 Lumber used for structural decking, beams, purlins, braces, columns, fascias, trim, blocking, timbers etc. To CAN/CSA-O80.1, .2, .5, .9 Series. To an average net retention of 6.4 kg/m^3 (0.040 pcf).

Acceptable Products:

Hickson	'Cedar Tone Plus'

.2 For all concealed exterior lumber (other than items specified under 2.1.8). Lumber used for roof cants, curbs, nailers, sleepers, sheathing, plywood decking, and interior lumber in contact with concrete block or poured concrete surfaces. To CAN/CSA-O80.1, .2, .5, .9 Series water borne preservative chromated copper arsenate (CCA) to an average net retention of 6.4 kg/m^3 (0.40pcf).

PART 3 - EXECUTION

3.1 **Preliminary Work**

.1 Give at least [5] days notice to the Architect before starting work.

.2 Drill all holes in steel members required unless steel members have been predrilled.

3.2 **Framing**

.1 Comply with OBC, Section 9.23.

3.3 **Erection**

.1 Install members plumb, true to line, levels and elevations and uniformly spaced.

.2 Form continuous members from pieces of longest practical length.

.3 Install spanning member with 'crown-edge' up.

.4 Do not use material which is warped, split, checked, twisted, or cupped unless otherwise directed.

.5 Fabrication and installation methods to allow for expansion and contraction of the specified materials.

.6 Install all rough hardware including nails, screws, bolts, washers, brackets, hangers, and fastening devices of all types.

.7 Fasten to hollow units and drywall with toggle bolts; to solid masonry or concrete with lead expansion shields and lag screws; and to structural steel with bolts through drilled holes, or welded stud-bolts or power driven self-drilling screws. Do NOT use organic fibre or wood plugs.

.8 Cast in anchors or inserts as specified, or drill concrete and use expansion shields and bolts.

.9 Set or countersink all fastening devices flush with surface of framing members. all fastenings shall be drawn up tight. Countersink bolts where necessary to provide clearance for other work. Use 10 mm ($^3/_8$") bolts for 50 mm (2") nominal bucks and blocking. Locate fasteners within 300 mm (12") of ends and uniformly spaced between. Space bolts at 800 mm (2'-8") oc.

3.4 **Appearance Grade Materials**

.1 Install lumber and panel members and finish with translucent or transparent stain type coatings with grade-marks, labels and other defacements concealed. Do not surface cut or sand to remove these marks.

3.5 **Furring and Blocking**

.1 Install furring and blocking accurately located and secured to provide support bases for surface-applied fitments [e.g. cabinets, plumbing fixtures, accessories, electrical fitments, etc.].

.2 Align and plumb faces of furring and blocking to a tolerance of 1:600.

.3 Install miscellaneous wood members. Do not regard furring, blocking or strapping indicated as exact or complete. Locate and secure these pieces to suit site conditions. Provide adequate fastenings and support required for attaching work of other sections.

.4 Fasten wood to masonry where required using approved nails.

.5 Install all wood blocking and plywood back-up required. Shape as necessary, and securely fix to steel where indicated.

.6 Install wood strapping behind all plywood panels to receive electrical, communication or mechanical devices, switches, controls and similar components. Strapping shall be nominal 25 x 50 mm (1" x 2") material located at 400 mm (16") oc. Recess vertical edge of furring of member adjacent to edge of panel 25 mm (1"). Cut ends of vertical furring 16 mm ($^5/_8$") back from top and bottom edges of panels.

3.6 **Rough Bucks and Nailers**

.1 Securely install wood bucks and nailers as required.

.2 Unless otherwise detailed, use material minimum 38 mm ($1^1/_2$") thick fastened with 9 mm ($^3/_8$") bolts located minimum 300 mm (12") from ends of members and uniformly spaced at minimum 800 mm (32").

3.7 **Clean-up**

.1 Remove debris and waste from site and leave 'broom clean'.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1 :General Requirements.

.2 Provide materials, labour and equipment for the installation of site-applied wood trim, moldings, millwork, door frames and screens, shelving, and tack boards as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 06100: Rough Carpentry, [co-ordinating work with this section.]

.2 Section 07900: Sealants, [co-ordinating work with this section.]

1.3 Applicable Codes and Standards

.1 Comply with requirements of Ontario Building Code, Ontario Occupational Health and Safety Act and municipal building By-laws and Regulations.

.2 Millwork to the Quality Standards of the Architectural Woodwork Manufacturers Association of Canada, AWMAC, Custom Grade.

1.4 Qualifications

.1 All work of this section must be performed by carpenters having a minimum of (5) years experience in work of similar type. They must be certified by their respective associations for this type of work.

1.5 Delivery, Storage and Handling

.1 Deliver all materials as specified, any defective, damaged, warped material or material deemed to be inferior to the specification by the Architect will be promptly replaced.

.2 All materials shall be stored and stacked in order to prevent damage from exposure to moisture.

1.6 Co-ordination and Co-operation

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

.2 Co-ordinate installation of work to be built-in by other sections, also equipment to be incorporated into finished carpentry work.

.3 Review drawings of other sections affecting work of this section to co-ordinate locations of other components.

1.7 Samples

.1 Submit 300 mm (12") long samples of each type of trim and molding.

.2 Do not proceed with work before the Architect's acceptance.

1.8 **Shop Drawings**

.1 For the following finish carpentry items, submit [6] copies of shop drawings clearly showing details of installation profiles, jointing and other related details.

1. Casework [site fabricated] & Trims
2. Moldings
3. Wood Door Frames and Wood Screens

PART 2 - PRODUCTS

2.1 **Softwood Lumber:** To CSA-O141 and NLGA Grading Rules, with maximum 14 percent moisture content. Use selected yard lumber for natural or paint finish. Clear Select Douglas Fir, Clear Select White Pine, Clear Select Red Cedar.

2.2 **Hardwood Lumber:** To National Hardwood Lumber Association [NHLA] standards, moisture content maximum 14 percent. Select Birch or Poplar as indicated on drawings or specified herein.

2.3 **Hardwood Plywood:** To CSA-O115 of thicknesses shown; plain sliced veneers; architectural grade, birch or poplar, good 1 side, sound other side, veneer on plywood core with Type 1 bond.

2.4 **Douglas Fir Plywood:** To CSA-O121 good 1 side sound other side select face, free from boats or defects.

2.5 **Miscellaneous Hardware:** To Section 05600: Miscellaneous Metals.

2.6 **Finished Hardware:** To Section 08710: Finish Hardware, supplied from hardware schedule.

2.7 **Fastenings:** Finishing nails and screws: To CSA-B111, hot dip galvanized for exterior work, electrogalvanized for interior work, or resin coated nails for power nailing of interior work.

2.8 **Adhesive:**

.1 **For Millwork:** Polyvinyl adhesive to CSA-O112.4.

.2 **For Casework and Cabinetwork:** Water resistant urea resin to CSA-O112.5-M1977, Type 1 and 2.

2.9 **Sealing Tape:** Preformed butyl tape 10-15 durometer hardness, paper release, width and thickness, as specified by manufacturer.

PART 3 - EXECUTION

3.1 **Preliminary Work**

.1 Give at least [5] days notice to the Architect before starting work.

.2 Provide temporary protection to all interior areas during operations.

.3 Upon completion of any site fitting in which core materials are exposed, apply one coat of sealer to all such surfaces scheduled to be concealed in the finished work.

.4 Drill holes in steel members required unless steel members have been pre-drilled under separate sections. Obtain Architect's acceptance prior to drilling.

3.2 **Installation - General**

.1 Install plastic laminate work with concealed fastening devices. Method of securing plastic laminate work shall be reviewed before commencing installation. Fasteners shall not be more than 600 mm (24") oc and 150 mm (6") from edges and ends. Scribe edge of plastic laminate to abutting dissimilar surfaces to effect neat, true and plumb closure.

.2 Install woodwork to custom grade requirements of AWMAC. Where items are being installed under this section which are furnished by sections other than 06221.

.3 Install work in accordance with drawings and as specified to affect a secure, neat and complete installation.

.4 Install materials in longest lengths possible, jointing only where support is obtained. Erect materials plumb, level, square and to required lines. Accurately cut, fit, frame and fasten members in a neat manner consistent with quality specified.

.5 Space fastenings at not greater than 600 mm (2'-0") oc unless otherwise specified. Locate fastenings not more than 150 mm (6") from end of member. Fastenings shall be staggered such that centre of fastening device is not greater than the lesser of 38 mm (1-$^1/_2$") from edge of framing member, or $^1/_3$ the width member.

.6 Plugging of concealed fastening devices shall consist of solid plugs up to 25 mm (1") diameter, and 10 mm ($^3/_8$") plywood for holes over 25 mm (1") diameter; same species as surrounding wood. End grain plugs are acceptable.

.7 Incorporate accepted provision to recognize expansion and contraction characteristics of materials. Make joints to conceal shrinkage; mitre exterior corners; cope interior corners; mitre or scarf end-to-end joints. Use blind mitre splines and dowels where detailed on drawings or as necessary.

.8 Nail trim with finish nails of properly selected dimension to hold members firmly in place without splitting wood.

.9 On exposed finished work, set all nails for filler. Do not drive wood screws when setting.

.10 When preservative treated wood members are cut, planed or drilled under this section, apply wood preservative to freshly exposed surfaces in accordance with manufacturers instructions prior to permanently affixing such members.

.11 Provide cutouts as required for inserts, grilles, service devices and other fitments and fixtures as required by other Sections.

.12 Make allowance where fixed objects pass through or project into and around periphery of work of this Section to permit normal movement without restriction.

.13 Install all work provided by Section 06221: Factory Cabinet Work.

3.4 Other Doors and Steel Frames

.1 Accurately hang; fit plumb and square without binding doors shall swing shut with 1.5 mm ($^1/_{16}$") clearance at head. 2.4 mm ($^3/_{32}$") at jambs and 6 mm ($^1/_4$") clearance over finished floor surfaces.

.2 Install steel frames in locations where indicated. Verify position in wall relate to adjacent components and surfaces.

.3 Install steel frames using accepted temporary bracing members to anchor head member to structure above securely. Install frames rigid and accurately aligned plumb, level and true to line in all planes. Anchor floor plates on concealed face of jamb to floor substrate material in an accepted manner. Provide and install metal shims where required to ensure level and plumb vertical and horizontal alignment of all surfaces.

.4 Install jamb extension members to ensure rigid installation. Effect all connections in an accepted manner.

.5 Install temporary wood brace at head for frame openings wider than 1.4 m (4'-6") in masonry walls until masonry is complete and set.

.6 Remove doors for finishing and sealing of edges by Section 09900: Basic Painting and re-install when dry.

3.5 Finish Hardware

.1 Take delivery of and install all finish hardware including butts, hinges, snaps, closers, panic hardware, strikes, bolts, escutcheons, cylinders, weatherstripping and any other supplied. Check each item as received and distribute to respective door sections.

.2 Install all other items as directed by Architect.

.3 Install lock cylinders to specialty items such as aluminum entrances, and the like.

.4 Make provisions for counter-sinking or counter-boring screw heads.

.5 Mount door stops for swing doors where hardware may contact wall finish or built-in fitments.

.6 Fix push and pull plates with minimum 6 screws each. Fix kick plates with screws at not more than 150 mm (6") oc. Where push and pull sets are back-to-back, mount with suitable through bolts.

.7 Install matching strike boxes with locksets and latchsets.

.8 Unless otherwise specified, allow minimum throw of 13 mm ($^1/_2$") for dead bolts.

.9 Install extension flush bolts to top and bottom of inactive leaf of pairs of doors without panic devices or other emergency hardware.

.10 Refer to section 08710 for further installation information.

3.6 Final Finishing

.1 Sandpaper finished wood surfaces thoroughly as required to produce uniformly smooth surface, always sanding in direction of grain run, except do not sand wood which is scheduled to be left rough. No coarse grained sandpaper mark, hammer mark, or other similar imperfections are acceptable.

.2 Clean work and notify painter when work is ready for sealing and finishing. Inspect work and co-operate fully in adjusting work to the Architect's approval.

3.7

.1 On completion of all work in building, check woodwork and plastic laminate work carefully for defects. Clean plastic laminate surfaces and remove identification marks.

.2 Adjust and refit working parts, and refinish as required to provide smooth operation without sticking and binding.

.3 Damage to work of this section attributable to work under separate sections shall be corrected by this section at no cost to owner.

3.8 Interior Trim

.1 Install, glue and finish nail to AWMAC Standard, custom grade.

.2 Select running trim to match adjacent pieces of even colour, grain and texture.

.3 Set nails and secure neatly; leave no hammer or drive marks; securely anchor to wall or floor bearings.

3.9 Completion

.1 Clean work and notify painter when work is ready for sealing and finishing. Inspect work and co-operate fully in adjusting work to the Architect's approval.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for factory fabricated cabinet, casework, as shown on the drawings, described herein or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 06240: Laminated Plastics and Stone Counter Top, [provide and install all laminated plastic.]

.2 Section 08712: Cabinet Hardware, [provide and install all specified cabinet hardware and accessories.]

.3 Division 16: Electrical, [co-ordinate work with this section.]

1.3 Standards

.1 Millwork to Standards of the Architectural Woodwork Manufacturers Association of Canada, AWMAC, Custom Grade.

.2 Materials, workmanship and performance standards to CAN3-A278.

1.4 Shop Drawings

.1 Provide [6] copies of shop drawings clearly showing details of construction, profiles, jointing, fastenings, colour schedule, hardware and finishes to the Architect's approval. Indicate site verified dimensions.

1.5 Delivery, Storage and Handling

.1 Delivery all materials as specified any defective, damaged, warped material or material deemed to be inferior to the specification by the Architect will be promptly replaced.

.2 Protect all items and store to preclude damage, warping and excessive changes in moisture content. Contractor shall ensure that dry storage areas are provided with sufficient heat to avoid harmful effects. Min. storage temperature, 16°C; relative humidity 25 to 55%.

.3 Protect exposed surfaces of plastic laminate by covering with heavy Kraft paper or approved alternative protection material prior to leaving shop.

1.6 Co-ordination and Co-operation:

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

.2 Provide and install all necessary components specified under this section, required to be fixed to or inset in the work of other sections. Inform related sections as to their locations.

1.7 **Warranty**

.1 Provide a signed certificate warranting that factory cabinetwork will retain finishing and performance standards listed in CAN/CSA-A278 Paragraph 6. Finishing for (2) years after date of final acceptance.

PART 2 - PRODUCTS

2.1 **Materials:**

.1 **Softwood Lumber:** To CSA-O141 and NLGA Grading Rules, with maximum 14 percent moisture content. Use selected yard lumber for natural or paint finish. Clear Select Douglas Fir, Clear Select White Pine, Clear Select Red Cedar.

.2 **Hardwood Lumber:** To National Hardwood Lumber Association [NHLA] standards, moisture content maximum 14 percent. Solid Red Oak and/or Clear Select Birch as indicated on drawings or specified herein.

.3 **Hardwood Plywood:** To CSA-O115 Architectural Grade (G/So) good 1 side sound other side, of thicknesses shown on drawings, plain sliced veneers, red oak veneer on plywood core with Type 1 bond.

.4 **Douglas Fir Plywood:** To CSA-O121 Architectural Grade (G/So) good 1 side sound other side, of thicknesses shown on drawings, select face, free from boats or defects.

.5 **Special Plywood:** To CSA-O115, Architectural Grade (G2S) 'Baltic Plywood', comprised of Baltic Birch 9 plys to 13 mm ($^1/_2$") and/or 11 plys to 16 mm ($^5/_8$") good 2 sides.

.6 **Highdensity Particle Core:** To CAN3-O188.1.

.7 **Highdensity Veneered Particle Core:** To CAN3-O188.1, Architectural Grade (G1S) and (G2S), of thicknesses shown on drawings, plain sliced veneers, red oak veneer on high density particle core with Type 1 bond.

.8 **Highdensity Melamined Particle Core:** Core to CAN3-O188.1, General Purpose Grade laminate to CAN3-A172.

.9 **Fastenings:** Nails and screws to CSA-B111

.1 Provide all items of rough hardware required to complete work of this section including without being limited to nails, bolts, washers, screws, metal shims, tie wire, expansion shields, clips and similar type fastenings.

.2 Use electro-galvanized steel nails with flat head of length to ensure positive fastening.

.3 Use electro-galvanized steel screws with Robertson flat head, of length to ensure positive fastening.

.4 All fastening devices shall be set or countersunk flush with surface of framing member.

.10 **Adhesives:**

.1 **Polyvinyl Adhesive:** To CSA-O112.4

.2 **Water resistant area resin:** To CSA-O112.5, Type 1 and 2.

.3 **Contact and Construction Adhesives:** as required to complete site installation

.11 **Plastic Laminate:** To Section 06340: Laminated Plastic.

.12 **Sealants:** To CAN/CGSB-19.24, Type 1, Class B, multi-component, chemical curing sealant; colour to match countertop or splash back.

2.2 General

.1 Obtain all on-site dimensions before fabricating items. Obtain all relevant data and incorporate provisions for items of equipment enclosed by millwork.

.2 Take site dimensions and verify wall alignment prior to proceeding with fabrication. Site conditions that vary with reviewed shop drawings shall be specifically noted on reviewed drawings and forwarded to Architect. Variances, due to site conditions necessitating significant revisions to shop drawings shall be accepted prior to fabrication.

.3 Fabricate running members in maximum standard lengths obtainable for the particular species wherever possible. Machining and sanding criteria to AWMAC standards.

.4 Fit all joints tight. Locate joints at points which will not interfere with, affect strength of detract form appearance of materials.

.5 Securely fasten intersecting framing members together at corners in an approved manner.

.6 Incorporate adequate provisions for scribing and fitting to adjoining surfaces in an approved manner.

.7 Provide for and incorporate provisions to recognize inherent shrinkage characteristics of materials specified.

.8 All cabinetwork shall be constructed to AWMAC standards, custom grade, flush overlay construction to details shown on drawings and/or specified herein.

.10 Construct fitments as shown or noted, adequately framed, and complete with gables, divisions and other members required to provide a firm and rigid installation. Use 19 mm ($^3/_4$") thick materials unless otherwise detailed. Edge band exposed edges with solid matching trim glued to substrate thickness as shown on drawings or specified herein.

.11 Where work is to be built in, allow additional material for scribing to permanent surfaces.

.12 **Cabinet Structure:** Flush overlay construction with exposed [i.e. facings, toe spaces, ends and gables] and semi-exposed [i.e. shelves, backs, drawer sides and backs] surfaces to AWMAC Standards 'Custom Grade' high density particle core minimum 19 mm ($^3/_4$") thick melamine or wood veneered finish with solid wood or plastic laminated banded edges continuously glued, as indicated on drawings. Plastic Laminate, as specified in Section 06221.

2.3 Finishes:

.1 **Laminated Plastic Finish:** Sand finished surfaces smooth; apply laminated plastic banded edges as specified in Section 06240: Laminated Plastic.

2.4 Schedule of Manufactured Items

.1 **General:** List of items contained in this schedule is not intended to be a complete and comprehensive list of all items to be furnished under this section. This list contains requirements which supersede AWMAC Grade requirements and/or provide supplementary information not necessarily contained on drawings. See drawings for extent of work.

.2 **Plastic Laminate Surfaced Wall and Column Panels:** To Section 06240: Laminated Plastic.

.3 **Wall and Column Panels:**

.1 Provide all framing required to adequately support built panels and shadow boxes.

PART 3 - EXECUTION

3.1 **Preliminary Work**

.1 Give at least [5] days notice to the Architect before starting work.

3.2 **Installation**

.1 Installation of all millwork by this Section.

.2 Where hardware installation is specified as part of work of this section make necessary site adjustments and assure correct and trouble-free installation.

.3 Make allowances where fixed objects pass through or project into and around periphery of work of this section to permit normal movement without restriction.

.4 Install all electrical junction boxes and empty conduits just above top of back of box section in shadow boxes ‘A’ and ‘B’ for future wiring and devices by others. Co-ordinate exact location with electrician.

.5 Install millwork tightly around all new and existing junction boxes on site and /or shop install any new junction boxes provided by electrician as required.

3.3 **Adjust and Clean-up**

.1 All working parts shall be adjusted, as required, to operate smoothly without sticking and binding.

.2 Upon completion of fabrication of work of this section, clean plastic laminate surfaces and remove identification marks.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for laminated plastic work as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections:

.1 Section 06200: Finish Carpentry, [provide countertops to this section for installation.]

.2 Section 06221: Factory Cabinet Work, [provide plastic laminate to this section for installation.]

1.3 Standards

.1 Millwork to Standards of the Architectural Woodwork Manufacturers Association of Canada, AWMAC, Custom Grade.

.2 To CAN3-A278.

1.4 Shop Drawings

.1 Provide [6] copies of shop drawings clearly showing details of construction, profiles, jointing, fastenings, colour schedule, hardware and finishes to the Architect's approval. Indicate site verified dimensions.

1.5 Delivery and Storage

.1 Deliver laminated plastic finished surfaces with heavy kraft paper protection and store in cartons during shipping.

.2 Protect laminated plastic surfaces during fabrication and installation stages; do not remove protective covering until final clean-up prior to final inspection.

.3 Do not store or install materials in areas where relative humidity is less than 25 percent or greater than 60 percent at 22 degrees C.

1.6 Warranty

.1 Provide a certificate to the Architect warranting that the laminated plastic will not warp, split or delaminate for (2) years after date of final acceptance.

PART 2 - PRODUCTS

2.1 Material

.1 **Laminated Plastic:** To CAN3-A172, Grade GP Type S, general purpose 1.5 mm ($^{1}/_{16}$") thickness pattern in standard colour range; texture finish.

Acceptable Products:
Wilsonart TFL panel 7970-18 High Line on all exposed faces ½" #841
and ¾" #845
Hidden interior faces Uniboard 168 Canadian Grey

.2 **Laminated Plastic Backing for Door Fronts:** By same manufacturer as laminated plastic facing, minimum 0.5 mm ($^1/_{64}$") thick, Wilsonart 7970-18 High Line

.3 **Plywood Cores:** Douglas Fir plywood; to CSA-O121, solid two sides, 19 mm ($^3/_4$") thick unless otherwise detailed.

.4 **Standard Density Core Particle Board:** To CAN3-O188.1, Grade H 19 mm ($^3/_4$") thick unless otherwise detailed.

Acceptable Products:
Wilsonart TFL panel 7970-18 High Line

.5 **Adhesive:** Contact adhesive to CAN/CSA-71.20 to laminated plastic manufacturer's instructions.

.6 **Sealer:** Water resistant, acceptable to laminated plastic manufacturer.

.7 **Sealant:** To CAN/CSA-19.24; normal temperature for wet conditions; movement range to 25 percent; colour to match countertop cover.

.8 **Draw Bolts and Splines:** For new core bases, acceptable to fabricator.

2.2 **Fabrication**

.1 Comply with CAN/CSA3-A172, Appendix A.

.2 Plastic laminate work shall meet Premium grade requirements of AWMAC except where otherwise specified, regardless of the grade of cabinetwork on which it is supported or attached

.3 Bond plastics laminate to core material with specified thermosetting adhesive and with a sustained force of 550 kpa (80 psi) during entire curing period. Apply self-edging using electro-pressure techniques. Ease exposed edges as 15°-20° from vertical. Balance all cores with backing sheet.

.4 Orange peel ripple, telegraphing of core and waviness of exposed edges are not acceptable. Assemble plastic laminated with neatly butted finishes and self-edging applied prior to face veneers.

.5 Apply plastic laminate to all counter and vanity tops as detailed. Arrange adjacent parts of continuous laminate work to match in colour and pattern. Form shaped profiles and bends as detailed.

.6 Within jobsite handling limitations, make tops and skirts continuous from 3.0 m (10'-0") stock lengths. Place joint over gables whenever practicable

.7 Take particular care in measuring, cutting and fitting.

.8 Ensure adjacent laminate sheets match in colour and pattern.

.9 Apply plastic facing sheets to base material as recommended by laminate and adhesive manufacturers. Ensure laminate and core profiles coincide to provide full continuous support and bond over entire surface. Use continuous lengths to minimize joints; maintain joints minimum 600 mm (2 ft) from sink cutouts. Offset joints in plastic facing from core joints.

.10 Form shaped profiles and accurately bend to laminate manufacturer's directions.

.11 Apply laminate to exposed edges of core material for straight self-edging strips or flatwork. Chamfer exposed edges uniformly at 20 degrees; do not mitre laminate edges.

.12 Apply laminate backing sheets, where required, to conceal core material to manufacturer's directions.

.13 Where indicated, apply laminated plastic liner sheets to interior of cabinetry to manufacturer's directions.

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

3.2 Installation

.1 Install work plumb, true and square, neatly scribed and fitted to adjoining surfaces.

.2 Make fastenings to cabinets, metal brackets and walls in concealed and secure manner.

.3 Use draw bolts and splines to form tight flush hairline joints.

.4 Rabbet cores at skirt and heel to provide a half lap joint. Glue heel and cores together under pressure.

.5 Ensure cutouts are prepared for inserts, sinks, grilles, appliances, outlet boxes, etc. Round internal corners, chamfer edges and seal exposed core edges.

.6 At junction of splash back and wall, apply a small continuous sealant bead.

.7 Remove kraft paper protective covering.

3.3 Clean-up

.1 Remove debris and leave finished work clean and polished.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment to complete joint sealant work as shown on the drawings, schedules, resealing of existing joints, spray foam sealant, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 06200: Finish Carpentry, [provide and install all sealant.]

.2 Section 09900: Basic Painting, [provide and install all sealant.]

1.3 Standards

.1 Comply with Ontario Building Code, Parts 5 and 9.

1.4 Supervision

.1 Comply with the recommendations and directions of manufacturers whose materials are specified. Consult manufacturer's technical representative and discuss the following terms with decisions confirmed in writing by the Contractor.

.1 Weather conditions under which work will be done.

.2 Anticipated frequency of joint movement.

.3 Shape factor of the joint.

.4 Durometer hardness, slump and curing characteristics of materials specified.

.5 Joint characteristics as built.

.6 Sample of sealed joint to be acceptable to Architect prior to completion.

1.5 Environmental Requirements

.1 Ensure sealant and substrate materials are at minimum temperature +5 degrees C (40 degrees F).

.2 Where necessary to apply sealants below temperature of +5 degrees C (40 degrees F), follow manufacturers recommendations.

1.6 Co-ordination and Co-operation

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

1.7 Warranty

.1 Provide a signed certificate warranting that caulking work will not leak, crack, crumble, melt, shrink, run, lose adhesion or stain adjacent

surfaces for a period of five [5] years after the certificate of final acceptance.

PART 2 - PRODUCTS

2.1 Materials

.1 **Primers:** Type recommended by sealant manufacturer.

.2 **Joint Fillers:**

.1 **General:** Compatible with primers and sealant, outsized 30 to 50 percent.

.2 **Extruded Closed Cell Foam:** Polyethylene, urethane, neoprene or vinyl; Shore A, hardness 20, tensile strength 140 to 200 kPa.

Acceptable Products: Or Approved Equal

Sternson	'Backer Rod'
Industrial Thermo Polymers	'Backer Rod'

.3 **Extruded Tubing:** Polyvinyl chloride or neoprene; with 6 mm ($^1/_4$") minimum thick walls.

.4 **Bond Breaker:** Pressure sensitive plastic tape.

Acceptable Products: Or Approved Equal

3M Ltd.	'No. 266 or No. 481'

.5 **Sealants:**

.1 **Sealant for vertical and horizontal non-traffic bearing joints:**

.1 Dry conditions, normal temperature range, movement range to 25 percent: to CGSB-19.18, 'Sealing Compound, One Component, Silicone Base, Solvent Curing'.

.2 Dry conditions, low temperature range, movement range to 25 percent: to CGSB-19.13, 'Sealing Compound, One Component, Elastomeric Chemical Curing'.

.3 Wet conditions, normal or low temperature range, movement range to 25 percent: to CGSB-19.24, 'Sealing Compound, Multi-Component Chemical Curing'.

.2 **Acoustic sealant:** to CGSB-19.21, 'Sealing and bedding Compound, Acoustical'.

Acceptable Manufacturers: Or Approved Equal
CGE Construction Sealants
Dow Corning Construction Sealants

Hilti
Mono
Tremco

.6 **Foam Insulating Sealant:** Two component rigid polyurethane foam in nozzle or pressure-applicator to CGSB-51.23, 'Spray-Applied Rigid Polyurethane Cellular Plastic Thermal Insulation'.

Acceptable Products: Or Approved Equal

Insta-Foam	'Froth Pak'.
Mono	'Instant Foam'

.7 **Joint Cleaner:** Xylol, methylethyleketone, toluol or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

.8 **Colours:** To match adjacent surfaces or clear as directed by the Architect.

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

3.2 Location

.1 Seal with sealant at the junction of the following **exterior** finishing materials, unless sealant is specified to be included in the work of other sections.

.1 Concrete to concrete (including external joints of precast concrete).
.2 Concrete to metal.
.3 Concrete to masonry.
.4 Masonry to metal
.5 Masonry to masonry.
.6 Metal to metal.
.7 Metal to wood.
.8 Wood to Wood.
.9 Wood to Masonry
.10 Wood to concrete.

.2 Seal at the junction of the following **interior** finishing materials unless sealant is specified to be included in the work of other sections:

.1 Concrete to concrete.
.2 Concrete to metal.
.3 Concrete to masonry.
.4 Masonry to metal.
.5 Masonry to masonry.
.6 Metal to metal.
.7 Gypsum Board to existing surfaces.
.8 Metal to gypsum board.

.3 Install pre-molded joint fillers in accordance with manufacturer's instructions, working in close co-operation with waterproofing trades.

.4 Seal joints from face to exposed surface.

3.3 Inspection

.1 Ensure joints to receive sealant are properly prepared.

.2 Ensure surfaces to be caulked are sound, dry, free from dirt, water, frost, loose materials, corrosion, paint and other foreign matter.

.3 Inspect joint sizes and correct to achieve depth ratio of $^1/_2$ joint width with minimum width and depth of 6 mm ($^1/_2$") and maximum width of 20 mm ($^3/_4$").

.4 Commence sealing work only after joint surfaces have been inspected and approved by the Architect. For projects with unusual or complicated caulking conditions, the Architect may require the sealant manufacturer’s

representative to visit site to discuss installation procedures with the contractor.

3.4 Preparation

.1 Before starting sealing, test materials for indications of staining or poor adhesion.

.2 Commence sealing on masonry only after mortar has cured.

.3 Remove all dust, dirt, other foreign matter and existing sealant and backer materials. Allow joint surfaces to dry thoroughly.

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

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

.6 Prepare concrete, masonry, glazed and vitreous surfaces to sealant manufacturers instructions.

.7 Install joint filler to achieve correct joint depth.

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

.9 Apply bond breaker tape where required to manufacturers instructions.

.10 Prime sides of joints in accordance with sealant manufacturers instructions immediately prior to sealing.

.11 Do not exceed shelf life and pot life of the materials and installation times as marked on the containers.

.12 For two part materials, mix sealants thoroughly with a mechanical mixer, capable of mixing at 80-100 rpm without mixing air into materials. Continue mixing until the material is of uniform colour and free from streaks of unmixed components.

3.5 Application

.1 Apply sealants and joint primers to manufacturers instructions. Apply sealant using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.

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

.3 In masonry cavity construction, vent sealed joints from cavity to 3 mm ($^1/_8$") beyond external face of wall by inserting vent tubing at bottom of

each joint and maximum of 1500 mm (5ft) OC vertically. Position tube to drain to exterior.

.4 Ensure that the correct sealant depth is maintained. The following chart is a guide for providing effective width-to-depth ratios for specified sealant:

JOINT WIDTH	**JOINT DEPTH**	
	Minimum	Maximum
6 mm ($^1/_4$")	3 mm ($^1/_8$")	
6 mm-13 mm ($^1/_4$"-$^1/_2$")	One half width	Equal to width
13 mm-25 mm ($^1/_2$"-1")	One half width	Equal to width
Over 25 mm (1")	As reviewed by Architect	

.5 Cut out damaged sealant unacceptable to the Architect; reprepare and prime joints and install new materials as directed.

3.6 Protection

.1 Provide wood planks or other approved, non-staining means of protection for the completed sealant installations where required to protect work from mechanical, thermal, chemical and other damage by other construction operations and traffic.

.2 Maintain protection securely in place until project completion. Remove protection when directed by the Architect.

3.7 Clean-up

.1 Clean adjacent surfaces immediately.

.2 Remove excess sealant and droppings using recommended cleaners as work progresses.

.3 Remove masking after tooling of joints. Remove materials installed for protection. Wash and leave work neat and clean.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment to provide rated labelled and unrated steel doors, insulated metal panels and frames complete, as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 04211: Basic Unit Masonry, [co-ordinating with work of this section.]

.2 Section 06100: Rough Carpentry, [co-ordinating with work of this section.]

.3 Section 06200: Finish Carpentry, [co-ordinating with work of this section and provide all steel doors for installation.]

.4 Section 07900: Sealants, [co-ordinating with work of this section.]

.5 Section 09900: Basic Painting, [co-ordinating with work of this section.]

1.3 Standards

.1 **Welding:** To CSA-W59-2018.

.2 Perform work of this section in accordance with requirements of Canadian Manufacturing Specifications for Steel Door and Frames, latest version of Canadian Steel Door and Frame Manufacturers' Association (CSDFMA) standard, except as otherwise specified herein.

1.4 Delivery, Storage and Handling

.1 Carefully handle doors, frames and screens to preclude any disfigurement, twisting or marking.

.2 Store frames on supports such that a minimum clearance of 100 mm (4") is maintained between underside of metal and ground or floor. Prevent moisture damage.

.3 Cover doors and frames in an approved manner to protect from inclement weather, water and damage.

.4 Cover all prefinished steel surfaces with protective masking.

1.5 Co-ordination and Co-operation

.1 Co-ordinate and co-operate with all other trades to ensure satisfactory and expeditious completion of the work.

1.6 **Shop Drawings**

.1 Submit [6] copies of shop drawings clearly indicating each door frame screen material, core thickness, reinforcements, glazing, type, profiles location of exposed fasteners and arrangement of hardware, etc.

.2 Include schedule identifying each unit with door marks and number relating to numbering on drawings and in door schedule.

.3 Show all door swings.

PART 2 - PRODUCTS

2.1 **Materials**

.1 **Sheet Steel:** Cold rolled, commercial grade, to ASTM A526/A526 with zinc finish. Interior ZF001 and Exterior G90.

.2 Minimum thickness for sheet steel components shall be in accordance with CSDFMA Specifications except as follows:

		GAUGE NO.	EQUIVALENT THICKNESS
.1	Frames & closures angles.	16	1.5 mm (0.0598")
.2	Frames for openings larger than 1200 x 2184 mm (4'-0"x7'-2").	14	1.9 mm (0.0747")
.3	Frame reinforcement & extension channels.	14	1.9 mm (0.0747")
.4	Doors and metal panels. Surface sheets	16	1.5 mm (0.0598")
	Surface sheets for doors greater than 1200 x 2184 mm (4'-0" x 7"x2")	16	1.5 mm (0.0598")

.5 Metal jamb anchors occurring in exterior walls shall be fabricated from galvanized sheet steel having zinc coating designation Z275 to ASTM A5250, 3 per frame minimum.

.2 **Core**

.1 In addition to CSDFMA specifications, interior rated doors; resin impregnated pre-expanded Kraft honeycomb core, and semi-rigid glass fibre insulation at 0.04 kg/m^3 (3 ld/ft^3) to requirements of CSA-A101-M1983, Type 1 is acceptable. Maximum opening of honeycomb shall be 19 mm ($^3/_4$").

.2 Exterior doors and metal panels; self-extinguishing foamed-in-place urethane foam only for 1-3/4” doors and metal panels and glass fibre for frames.

.3 Sound rated doors; sufficient density to provide satisfactory structural support and sound reduction characteristics of 32 decibels at average frequencies of 125 to 4,000.

.3 **Door Bumpers:** To manufacturers requirements of colour selected.

.4 **Primer:** Zinc rich primer conforming to CGSB-1-GP-181M.

.5 **Panel Fasteners:** Concealed fasteners of approved hot dip galvanized steel, type to provide accurate, secure installation.

.6 **Metal Filler:** Two component epoxy type.

.7 **Phosphatizing:** To CGSB-31-GP-105Ma.

.8 **Accessories:** Guard boxes, tie anchors, hinges, strikes, reinforcing, spreaders, finishing hardware, glazing stops, etc. of approved manufacturers.

2.2 **Welding**

.1 Ensure welds are continuous, free from inclusions, porosity, lack of fusion penetration, uneven contour, undercuts and cracks. Remove weld spatter on expose surfaces. **NOTE: Continuously weld all seams and joints, grind smooth flush, dress and fill.**

2.3 **Fabrication (frames)**

.1 Form profiles accurately to details indicated. All frames shall have mitred and welded corners. Knock down frames are unacceptable for this project.

.2 Prepare for hardware using approved templates.

.3 Reinforce all door frames for closers.

.4 Fill all exposed surface depressions and all joints resulting from fabrication of frames with metallic filler and sand to a smooth, uniform finish.

.5 Prepare each door frame for bumpers unless indicated otherwise. Provide and install 3 bumpers on strike jamb of each single leaf door frame and 2 bumpers on head of double leaf door frame.

.6 Ship each frame complete with easily removable metal channel or angle shaped spreaders.

.7 Terminate all door frames at top concrete slab. Provide floor plates for anchorage of slab.

.8 Provide jamb/mullion extension/reinforcement channels for each jamb and mullion in metal stud partitions extending to underside of structure with approved provision for vertical adjustment.

.9 Reinforce door heads for frames with door openings exceeding width of 1500 mm (5'-0"). Weld all reinforcement to frame in an approved manner to realize total strength potential.

.10 Provide frames with integral base at locations indicated.

.11 Make allowance for deflection to ensure structural loads are not transmitted to frames.

.12 Use thermally broken and insulated frames to exterior doors.

2.4 **Fabrication (slab doors and panels)**

.1 Construction all doors and panels of flush type hollow steel construction or honeycomb core construction. Form each face from a single sheet of metal. **NOTE: Continuously weld all seams and joints, grind smooth flush, dress and fill.**

.2 Reinforce doors to ensure that the maximum corner-to-corner racking of doors does not exceed 1.5 mm ($^{1}/_{16}$").

.3 Prepare doors for hardware as per frame requirements. Where pairs of doors occur, prepare meeting edge to receive integral astragal. Refer to Hardware Schedule for removable mullions, astragals and the like for fire rated doors.

.4 Bevel strike edges of doors 1.5 mm ($^{1}/_{16}$") maximum.

.5 Provide continuous metal closure at top of doors flush with edges of exposed surfaces. Provide continuous metal closure at bottom of doors.

.6 Clean doors of all deleterious substances and contaminants, sand, flood coat with air drying paste filler, and again sand to eliminate all unevenness or irregularities including dimpling resulting from welding.

PART 3 - EXECUTION

3.1 **Installation:** Provide doors, frames and screens to appropriate section as listed in 1.2 above for installation with 3 anchors minimum per frame.

3.2 **Clean-up**

.1 After inspection and acceptance, remove manufacturers labels, clean and polish, ready for painting under Section 09900.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Conditions.

.2 This section is used as a control of the hardware and for the provision of dimensional information and all other requirements necessary for the installation of the finish hardware.

1.2 Related Work Under Other Sections

.1 Section 06200: Finish Carpentry, [provide all finish hardware to this section for installation.]

1.3 Standards

.1 Hardware must be listed on the CAN/CSA-'69' series 'Qualified Products List' and ANSI/BHMA 'A' Series, except interior use door closers and National Builders' Hardware Association (NBHA).

.2 Locate and install door hardware to the Canadian Steel Door and Frame Manufacturers Association Standard 'Canadian Metric Guide', unless otherwise detailed.

.3 Use only one manufacturer for similar products.

1.4 Delivery, Storage and Handling

.1 Deliver each item of hardware packaged separately in original individual containers, with necessary screws, keys, instructions and installation templates. Mark each container with item number show on list.

.2 Be responsible for arranging delivery time and date to site, or door manufacturer, of all hardware so that all work may progress without delay or interruptions.

.3 Hardware supplier and hardware installer together shall check, in detail, hardware delivered to site to prevent discrepancies, shortages or omissions.

.4 Storage and protection of hardware is responsibility of the general Contractor and/or installer.

.5 Any loss or damage shall be the Contractor's sole responsibility. Exercise close control over handling of hardware particularly the distribution of keys.

1.5 Maintenance Data

.1 Provide maintenance data, parts list, manufacturer's instructions for each type of door closer, lockset, door holder, and panic hardware.

.2 Provide (2) sets of wrenches for door closers and locksets.

.3 Brief Owner's maintenance staff regarding proper care of hardware such as lubrication of locksets, and adjustments of door closers, cleaning and general maintenance.

1.6 **Certification and Warranty**

.1 Hardware supplier shall inspect operation of all installed hardware. Upon completion of this inspection, present a list of deficiencies to General Contractor for correction. Forward copies of deficiency list to Owner and Consultant.

.2 On completion of finish hardware installation, and after rectification of deficiencies, submit to Finish Hardware Consultant written certification that all materials are accounted for, correctly installed and functioning normally.

.3 Submit a written warranty, in accordance with Division covering replacement of defective hardware for a period of (1) year.

1.7 **Co-ordination**

.1 Before furnishing any hardware, check all drawings and specifications for hardware requirements, verify door swings, check all shop drawings with frame and door schedules and advise Architect in writing of any discrepancies noted.

PART 2 - PRODUCTS

2.1 **Finish Hardware** See Hardware Schedule.

PART 3 - EXECUTION

3.1 **Installation**

.1 All installation to manufacturers recommendations.

3.2 **Templates**

.1 Provide timely lists of materials complete with setting diagrams, dimensions and sizes to all concerned.

.2 Use template hardware for hollow metal doors and frames.

.3 Provide necessary templates for preparation of doors and frames.

3.3 **Installation, Heights and Requirements**

.1 Hinges: 3 per door for doors less than 2130 mm (7'-0") in height. 4 per door for doors over 2130 mm (7'-0") in height.

.2 Deadlock Strikes: 1260 mm ($49^1/_2$") form finished floor.

.3 Mortise Strikes: 980 mm ($38^1/_2$") form finished floor.

.4 Backset for Locksets: 70 mm ($2^3/_4$").

.5 Push Plates and Door Pulls: 1066 mm (42") from finished floor.

.6 Deadlocks: 1250 mm (50") from finished floor.

.7 Exit Device Cross Bar: 990 mm (39") from finished floor.

.8 Door Closers and Door Holders: Degree of opening to be 90 degrees unless noted otherwise.

.9 All installation heights to meet A.N.S.I. requirements and be approved by Finish Hardware Consultants.

3.4 Clean and Adjust

.1 Upon completion of finish hardware installation adjust for smooth silent secure operation.

.2 Clean and polish finish hardware and adjacent surfaces ready for use.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Conditions.

.2 Provide materials, labour and equipment to install new cabinet hardware shown on the drawings described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 06221: Factory Cabinet Work [provide all cabinet hardware under this section]

.2 Section 08710: Finish Hardware [provide all lock sets to this section]

1.3 Standards

.1 Hardware as listed on CSA-69-GP-8M 'Qualified Products List'.

.2 Installations to Architectural Woodwork Manufacturers Association of Canada Standard AWMAC.

.3 Performance standards to CAN3-A278;

.4 Use only manufacturer of similar products; preferably the same products as used in the existing building, if satisfactory and available.

1.4 Handling

.1 Clearly label each package of hardware, together with installation instructions with regard to location on project.

.2 Deliver and store packages in locked, clean, dry storage room and maintain a check-off inventory list as each item or package of items is installed.

PART 2 - PRODUCTS

2.1 **For Each Bank of Adjustable Shelving:** Four satin nickel-plated adjustable standards complete with four semi-concealed brackets for each shelf.

Acceptable Products:

Richelieu	No. 5834-180 for Metal Shelf Clips for drilled holes.

2.2 **For Each 19 mm ($^3/_4$") Door:**

.1 One pair soft-closing concealed hinges, steel body, plastic strike, clip type with inserta.

Acceptable Products:

Blum	'Modul 110 degree'

.2 One brushed aluminum flush continuous door pull.

Acceptable Products:

Richelieu	No. 3182

.3 One standard cam lock with 4 identical keys.

Acceptable Products:

Richelieu	No. 225-084 140

2.3 **Pull Out Shelving for Blind Corners:** Rev-A shelf two tier organizer for blind corner cabinet.

Acceptable Products:

Richelieu	No. 537215 GRL for Left Side.
Richelieu	No. 537215 GRR for Right Side.

2.4 **Pull Out Waste Bin:** 2x 15L pull out waste bin unit.

Acceptable Products:

Richelieu	No. 3666900 Black.

PART 3 - EXECUTION

3.1 Provide installation instructions and templates to cabinet fabricator.

3.2 Install hardware to manufacturer's instructions; adjust for smooth, silent and secure operation.

3.3 Clean and polish installation and adjacent surfaces, ready for use.

-End-

PART 1 – GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for the installation of new dry packed cement base and new bonded thin-set cement seam-less terrazzo and precast cove base, patching and refinishing of existing venetian terrazzo floors and base as shown on the drawings described herein or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 06100: Rough Carpentry, [co-ordinating with work of this section.]

.2 Section 07900: Sealants, [co-ordinating with work of this section.]

1.3 Standards

.1 Do terrazzo work in accordance with the Terrazzo, Tile and Marble Association of Canada [TTMAC] Manual. Tradesperson to have minimum of 5 years experience in this type of work and trained to do specified Seamless Terrazzo System, see below.

1.4 Power Supply for equipment

.1 Subtrade to provide separate power generator compatible to Generac or equal, do not hook-up to school panels.

1.5 Samples

.1 Provide minimum a 300mm (12”) x 300mm (12”) control sample of each of the samples of colours and aggregates as selected by the Architect.

1.6 Examination

.1 Visit site, determine existing conditions and limitations and requirements for protection of adjacent areas; verify dimensions.

1.7 Delivery and Storage

.1 Deliver in original packages and containers. Handle materials carefully to avoid damage to new and existing work. Store materials under suitable protective coverings on skids clear of ground or floor. Keep dry and free from foreign matter.

1.8 Environmental Conditions

.1 Maintain air and structural base temperatures at 12 degrees C minimum or 20 degrees C maximum for 24 hours before, during and after installation.

1.9 Warranty

.1 Provide a signed certificate warranting materials and installation against cracking, splitting, discolouration or loosening for a period of [10] years from the date of the certificate of final acceptance.

PART 2 – PRODUCTS

2.1 **Conductive Matrix :** As recommended by the manufacturer.

2.2 **Marble and Granite Chips:** as selected by the Architect.

2.3 **Colour Pigments:** Non fading mineral pigments to British standard 1014 as selected by the Architect.

2.4 **Flexible Reinforcing Membrane:** Iso-C with fiberglass scrim reinforcing. Supplied by the manufacturer.

2.5 **Sealant:** As recommended by manufacturer, high performance, high gloss, chemical-resistant.

2.6 **Cleaners, Sealers and Floor Finish:** Terrazzo, Tile and Marble Association of Canada Types 1001,1002,1003,1004,2001,2002 and 3001 as applicable and as recommended by the manufacturer.

2.7 **Seamless Terrazzo Epoxy Primer:** Over dry pack base as recommended by manufacturer, complete with full sand broadcast to allow for bonding to seamless terrazzo.

2.8 **Seamless Terrazzo System Products Manufacturer:** Seamless Terrazzo products by Durabond Products Limited, Anthony Rapone (416) 904-9895

2.9 **Seamless Terrazzo precast cove base or poured in place cove base:** As recommended by the manufacturer, complete with continuous stainless steel top trim.

2.10 **Waterproofing membrane (showers):** Kerdi membrane by Schluter Systems or approved equal.

2.11 **Dry Packed Cement Base:** Portland Cement To CAN/CSA-A5, Type 10, Normal as recommended by the manufacturer, maximum 4” (100mm) thick.

2.12 **Reinforcing Mesh:** Galvanized welded wire mesh 2” (50mm) x 2” (50mm) 16 gauge, square openings.

2.13 **Isolation Membrane:** Polyethylene Film; to CAN/CGSB-51.34, Type 2, 4 mil thick or 15 lb. unperforated roofing felt.

2.14 **Moisture Mitigation Membrane:** Moisture mitigating membrane with maximum 0.3 perms with 100% RH. Full coverage purpose made one component water based 2 coat system moisture mitigation membrane over clean smooth concrete sub floor, complete with full sand broadcast over to allow bonding to dry pack cement base as recommended by the manufacturer.

2.15 **Perimeter Foam Gasket:** Full perimeter wall foam expansion pink sill gasket as recommended by manufacturer, between dry pack cement base/finished terrazzo floor and new or existing wall surfaces.

2.16 **Transition strips:** Schluter reno ramp, Reno U or Deco depending on condition.

2.17 **Specified Seamless Terrazzo Trained Installers:** The following is a list of the specified seamless terrazzo system trained installers:

Trained Installers:

Castlewall Flooring Carlo Rao, 20 Coville Rd. North York, ON, 416-256-9100, carlo@castlewall.ca

Gem Campbell Manny Cunha, 505 Clayson Rd., North York, ON, 416-746-1700, manny@gemcampbell.com

Roppaco Terrazzo Max Roppa, 3209 Orlando Dr., Mississauga, ON, 646-325-4152, max@roppaco.ca

Senate Flooring Neil Belluz, 365 Grays Rd. Stoney Creek, ON, 905-560-0845, neil@senateflooring.com

Terrazzo Mosaic & Tile Co. Ltd. Mark Onorato, 900 Keele Street, Toronto, ON, 416-653-6111, mark@tmtcoltd.com

York Marble Glen Pestrinut, 2 Sheffield Dr, North York, ON, 416-235-0161, glen@yorkmarble.com

PART 3 – EXECUTION

3.1 **Preliminary Work**

.1 Give at least [5] days notice to the Architect before starting work.

3.2 **Preparation of Surfaces**

.1 Examine all surfaces upon which the work of this section is to be installed and report any defects to the Architect.

.2 **Dry grinding with HEPA vac system is required for all new and existing refinished terrazzo floor and base surfaces.** Clean existing surface using TTMAC recommended surface cleaner and rinse clean. After grinding apply terrazzo matching filler/leveler to manufacturer's directions and cure ready for installation of replacement materials. Maximum surface tolerance 1:400.

.3 Seamless terrazzo shall be clean and sound with 1500 polished finish with minimum of ½" 13mm thickness below finished floor levels, conforming to general contour required for slopes to floor drains. All base surfaces shall be clean and sound.

.4 For refinishing of existing terrazzo and base dry grind all surfaces with HEPA vac system.

.5 For any patching, remove all defective or damaged work before patching with new terrazzo material to match existing.

3.3 Installation

.1 Concrete to 28 day cure minimum. Clean floor slab, remove laitance by dry HEPA vac system grind and or acid etch and rinse thoroughly with clean water. Moisture content in slab shall not exceed 16% to ASTM F-2170. Perform moisture testing before installation.

.2 Apply isolation membrane on sand dusting and full foam perimeter gasket and then install dry packed mesh reinforced cement base sloped to drains as shown on drawings or as necessary to complete the work.

.3 Apply specified moisture mitigation membrane 2 coat system in even layer over entire sub-surface and allow to cure.

.4 Mix and install seamless cement terrazzo system and precast base and apply terrazzo primer before install of terrazzo strictly under specifications of manufacturer and where possible under the direction of the manufacturer's representative. Mask all adjacent surfaces.

.5 Dry grinding with HEPA vac system is required for all new and refinished terrazzo surfaces. Grout terrazzo when it has set sufficiently hard as specified for thin set terrazzo topping.

.6 For new and refinishing of existing terrazzo surfaces apply minimum 2 coats of recommended sealer to all surfaces and final non slip wax coating.

.7 For any patching remove and replace defective or damaged work.

3.4 Clean-up

.1 Remove debris; thoroughly wax with non-slip product and clean all terrazzo surfaces and leave ready for occupancy.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for the installation of resilient floor tile and wall base shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

None

1.3 Standards

.1 Do resilient tile and base work in strict accordance with the detailed directions of the manufacturer's supplying the material.

1.4 Samples

.1 Provide a manufacturers technical manual clearly showing the project name, tile types, accessories and colours, together with installation, cleaning and maintenance requirements.

1.5 Maintenance Materials

.1 Provide extra (1) standard size full box of each floor tile and base type and colour from the same production runs as the materials to be installed. Store where directed for future maintenance use.

1.6 Delivery and Storage

.1 Deliver in original packages and containers. Handle materials carefully to avoid damage to new and existing work. Store materials under suitable protective coverings on skids clear of ground or floor. Keep dry and free from foreign matter.

1.7 Environmental Conditions

.1 Maintain material and room at 20 degrees C minimum for 24 hours before, during and after installation.

.2 Maintain air and structural base temperatures at temperatures recommended by material manufacturer for 48 hours before, during and 48 hours after installation.

1.8 Warranty

.1 Provide a signed certificate warranting material and installation against loosening, cupping and shrinking for a period of two [1] year from the date of the certificate of final acceptance.

PART 2 - PRODUCTS

2.1 Materials

.1 **Vinyl Reinforced Tile (VRT):** To CSA-A126.1, 300 x 300 mm size (12"x12"), 3.2 mm ($^1/_8$") thick, Type A, Waterproof abrasive resistant in standard, colour and pattern as selected by Architect.

Acceptable Products: *Or Approved Equal*
Tarket ' VCT II colour selected by Architect'

.2 **Base:** Straight, top set, fire retardant nitrile plasticized vinyl to CAN/CSA A126.5, Type 2 and ULC S102.2, plain pattern, 2.4 mm ($^3/_{32}$") thick, 100 mm (4") high, in maximum lengths. Maximum flame spread rating 25, maximum smoke developed 60.

Acceptable Products:
Tarkett Vinyl Cove Base 4" colour to match existing.

.3 **Transition Strips:** Continuous Stepless transition trim, of sections listed below.

Acceptable Products:

Schlüter-Systems	Reno Ramp, Reno U or Deco, Brushed Aluminum Finish, size to suit' VRT/LVT to zero or other

.4 **Primer and Adhesive:**

.1 **For Vinyl Reinforced Tile (VRT):** Waterproof, contact type, selected to suit all substrates and locations to flooring manufacturer's recommendations.

.2 **For Luxury Vinyl Tile (LVT):** Waterproof, contact type, selected to suit all substrates and locations to flooring manufacturer's recommendations.

.3 **For Bases, Thresholds, etc.:** High wet strength, fire and smoke rated to CGSB 41-GP-34M and to primer and adhesives and manufacturer's printed directions.

Acceptable Products: Or Approved Equal

Flextile	'1251-V'	[covebase cement] [rubber/vinyl]
Domcor/Deltal	'Covegrip #97'	

.5 **Filler/Leveller:** Purpose made full self leveling latex-cement underlayment over existing concrete subfloor.

Acceptable Products: Or Approved Equal

Ardex or Mapei

.6 **Moisture Mitigation Membrane:** Full coverage purpose made one component water based 2 coat system moisture mitigation membrane.

Acceptable Products: Or Approved Equal

Ardex 'VR98'

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

.2 Provide temporary protection to all areas during operations.

3.2 Preparation of Concrete Subfloor

.1 Prepare all existing concrete subfloors to ASTM F710. Grind smooth all surfaces to remove all contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.

.2 Remove all high spots and fill in all low spots, holes and cracks with specified filler. Fill cracks, holes, depressions and irregularities in the substrate use specified underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate. Do not install floor covering over expansion joints.

.3 Vacuum clean floor before applying new finished flooring.

.4 Concrete floors must be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitence, mold, mildew, and other foreign materials that may affect dissipation rate of moisture from the concrete, discoloration or adhesive bonding.

.5 Apply specified full coverage filler/self leveling product over entire surface as per manufacturer’s instructions.

.6 Apply specified full coverage moisture mitigation membrane product over entire surface as per manufacturer’s instructions.

3.3 Vinyl Reinforced Tile Application (VRT)

.1 Apply adhesive uniformly over surface using notched spreader as recommended by the tile manufacturer. Spread only sufficient adhesive to ensure that tile covering is complete before initial set occurs.

.2 Lay tile with joints parallel to building lines; produce a symmetrical tile pattern; use minimum 1/2 width border tile.

.3 Unless otherwise detailed, install tile to a staggered ashlar pattern, with continuous joints flowing with the direction of mottle and parallel to the longer dimension of the room or area. Stagger cross joints alternately by half a tile.

.4 Carefully scribe and cut tile to fit around fixed objects, corners, frames, etc.

.5 Roll tile with a 45 kg (100lb.) 3 section roller to expel air bubbles and level other imperfections.

.6 Use full spread coverage adhesive as recommended by the Manufacturer.

3.4 Base Application

.1 Apply adhesive to wall and floor only.

.2 Lay out base to minimize number of joints.

.3 Set preformed external corners.

.4 Set base in full bed of adhesive to both wall and floor surfaces, straight, level and to 1:400 tolerance.

.5 To produce tight closed joints, scribe and fit bases accurately coped at internal corners to produce tight closed joints to preformed corners, door frames and other objects.

3.5 Clean-up

.1 Remove excess adhesive with approved stripper solution; rinse and dry.

.2 Wash floor tile and bases to manufacturer's directions.

.3 Prohibit traffic on floor for 48 hours after installation.

.4 Remove and dispose of debris and leave premises in a washed condition.

.5 **Owner will be responsible for the sealing and waxing of the floors and bases.**

.6 Provide extra (1) standard size box of each VRT tile for future maintenance.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for painting and finishing new and existing materials as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 04211: Basic Unit Masonry, [painting new masonry.]

.2 Section 05120: Structural Steel, [painting of structural steel.]

.3 Section 07900: Sealant, [co-ordinating with work of this section.]

.4 Division 15: Mechanical, [painting of all mechanical items.]

.5 Division 16: Electrical, [painting of all electric items.]

1.3 Standards

.1 **Paint Materials:** To MPI Architectural Painting Specification Manual and MPI Maintenance Repainting Manual, Exterior and Interior Systems. Provide signed certificate stating materials comply with the standards and that paint materials for each coating are products of one manufacturer only. Use only odourless solvent products in all interior locations. Do not mix or thin. Use materials and colours directly from the manufacturer's containers.

.2 **Workmanship Standards:** To MPI Architectural Painting Specification Manual and MPI Maintenance Repainting Manual, Exterior and Interior Systems as applicable with sufficient coats to provide full coverage, colour match and uniform sheen, but using minimum number of coats specified. Conform to regulations of authorities having jurisdiction.

1.4 Samples

.1 Submit the successful manufacturers colour system with the approved colours marked and related to those used on the approved colour schedule. Submit the colours to the Architect for approval and retention in the project file. Ensure finished work matches manufacturers colour sample.

1.5 Environmental Requirements

.1 Do not apply paint finish in areas where dust is being generated.

.2 Do not clean equipment, brushes, rollers, etc. on the premises.

.3 During paint operations, provide sufficient fresh air circulation.

.4 In cold weather, use temporary exhaust fans or ozone air purifier.

1.6 Delivery and Storage

.1 Deliver materials in original containers with labels intact and seals unbroken.

.2 Store materials under covers and protect from fire at all times. The Architect will not provide material storage space.

1.7 Protection

.1 Before commencement of work, remove cover plates of service devices, surface hardware, frames of lighting fixtures and all other obstructions. Replace them in satisfactory condition when work of this section is completed, to the approval of Architect.

.2 Before commencement of work, protect all surface hardware that is impractical to remove. Protect all weather stripping, acoustic and smoke seal gaskets in an approved manner.

.3 Remove soiled and used rags, waste and empty containers from the building daily. Take all precautions to preclude a fire.

.4 Post legible signs at all points of entry to the areas in which work of this section is being applied.

.5 Erect suitable barriers to prevent traffic and other trades from working in such areas during application of this work.

1.8 Inspection

.1 Have material suppliers' representatives visit site in company with Contractor and painter prior to commencement of operations to discuss finishing procedures to be used and to analyze conditions of surfaces to be coated, in order that alternative recommendations may be accorded consideration, should adverse conditions exist.

.2 Ensure that material suppliers' representatives visit site at intervals during surface preparation and application operations, to ensure that specified surface preparation has been completed, specified products are being used, proper number of coats are being applied, and specified finishing procedures are being implemented.

.3 Submit to Contractor and Architect a written report of material suppliers' representatives verify conformance to Specifications.

1.9 Maintenance Materials

.1 Provide extra (1) 4L unopened can of each colour of paint and stain. Store where directed for future maintenance use.

PART 2 - PRODUCTS

2.1 Colours: as selected by the Architect (Maximum up to 4 colours per space.)

2.2 **Gloss Values**

.1 Gloss values at 60% and Sheen Values at 85% determined in accordance with MPI Gloss:

.1	0 to 5 for flat.	max. 10 sheen
.2	5 to 10 for high sheen flat.	10-35 sheen
.3	10 to 25 for eggshell.	10-35 sheen
.4	25 to 35 for satin.	min. 35 sheen
.5	35 to 70 for semi-gloss	
.6	70 to 85 for gloss	
.7	85 to 100 for high gloss	

2.3 **Interior Finish Materials:**

.1 For New Concrete
One coat Block Filler
Two coats Primer Sealer
Two coats Satin or Semi-Gloss Enamel

.2 For Existing Concrete Block
One coat Multi Surface Primer Sealer for oil or latex based original paint
Two coats Satin Enamel

.3 For Epoxy Finish on New Concrete Block
Two coats Block Filler
One coat Epoxy Primer
Two coat Epoxy Colour Coat

.4 For Epoxy Existing Concrete Block
One coat Epoxy Multi Surface Primer for oil or latex based original paint
Two coat Epoxy Colour Coat

.5 For New Gypsum Board and Plaster Walls and Ceilings
One coat Primer Sealer
Two coats Flat Paint on Ceiling and Two coats Satin on Walls

.6 For Existing Gypsum Board and Plaster Walls and Ceilings
One coat Multi Surface Primer Sealer for oil or latex based original paint
Two coats Flat Paint on Ceiling and Two coats Satin on Walls

.7 For New Gypsum Board and Plaster Walls in High Humidity Areas
One coat Primer Sealer
Two coats Semi-Gloss Enamel

.8 For Existing Gypsum Board and Plaster Walls in High Humidity Areas
One coat Multi Surface Primer for oil or latex based original paint
Two coats Satin Enamel

.9 For Painted New Wood Doors (on exposed edges)
One coat Primer Sealer
Two coats Semi-Gloss Enamel

.10 For Painted Existing Wood Doors (on exposed edges)
One coat Multi Surface Primer for oil or latex based original paint
Two coats Semi-Gloss Enamel

.11 For New Primed Ferrous Metal Surfaces
One coat Spot Priming
One coat Multi Surface Primer for oil or latex based original paint
Two coats Gloss Enamel

.12 For Existing Primed Ferrous Metal Surfaces
One coat Spot Priming Rust Inhibitor Type
One coat Multi Surface Primer for oil or latex based original paint
Two coats Gloss Enamel

.13 For New Galvanized and Zinc Coated Metal
One coat Cementitious Galvanized Metal if bare metal or
One coat Primer
Two coats Semi-Gloss Enamel

.14 For Existing Galvanized and Zinc Coated Metal
One coat Cementitious Galvanized Metal if bare metal or
One coat Spot Priming Rust Inhibitor Type
One coat Multi Surface Primer for oil or latex based original paint
Two coats Semi-Gloss Enamel

.15 For Pipe Insulation Covering
One coat Tinted Primer
Sealer
One coat Semi-Gloss Enamel

.16 Existing and New Interior Wood Stained
One coat wiping stain
One coat sanding sealer
Two coats Semi-Gloss Varnish

2.4 Exterior Finish Materials

.1 For New Primed Ferrous Metal Surfaces
One coat Spot Priming
One coat Multi Surface Primer for oil or latex based original paint
Two coats Gloss Enamel

.2 For Existing Primed Ferrous Metal Surfaces
One coat Spot Priming Rust Inhibitor Type
One coat Multi Surface Primer for oil or latex based original paint

Two coats Gloss Enamel

.3 For New Galvanized and Zinc Coated Metal
One coat Cementitious Galvanized Metal if bare metal or
One coat Primer
Two coats Semi-Gloss Enamel

.4 For Existing Galvanized and Zinc Coated Metal
One coat Cementitious Galvanized Metal if bare metal or
One coat Spot Priming Rust Inhibitor Type
One coat Multi Surface Primer for oil or latex based original paint
Two coats Semi-Gloss Enamel

Acceptable Products: (Premium professional quality paint as per the current MPI Manual. Products with specific manufacturer listed will not be substituted without Architect's written approval)

Benjamin Moore
Dulux-Glidden
Para Paints and Coatings
Sherwin Williams
Or Approved Equal

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

3.2 Preliminary Repairs

.1 Cut away the cracked or fissured finish to expose the primary substrate for a minimum of 300 mm (12") on both sides of the crack[s] or fissure[s].

.2 Examine substrate surface and where cracks or fissures are due to normal settlement or acceptable building movement, fill with compatible materials to material manufacturer's directions and the Architect's approval.

.3 Fill and neatly join repairs to existing work for both substrate and finish; trowel to an even, level and matching texture; cure and sand as required.

.4 Reprime entire repair to ensure colour and texture matches the surrounding finished surfaces prior to normal repainting operations.

3.3 Preparation of Surfaces

.1 Prepare wood surfaces to MPI standards:

.1 Use CAN/CGSB 10-GP-126M vinyl sealer over knots and resinous areas.

.2 Apply wood paste filler to nail holes and cracks.

.3 Tint filler to match stains used to finish woodwork.

.2 Touch up shop primer on steel with MPI approved primer applied to MPI procedures.

.3 Prepare galvanized steel and zinc coated surfaces to CAN/CGSB 85-GP-16.

.4 Prepare masonry, surfaces to MPI procedures.

.5 Prepare new wallboard surfaces to MPI procedures. Fill cracks with plaster patching compound.

.6 Prepare copper piping and accessories to MPI procedures.

.7 Thoroughly clean all existing surfaces, sand and scrape loose paint from existing surfaces, remove all abandoned wall plugs, nails, screws, remove all oil, grease, tar, etc., fill all holes and low areas flush with existing surfaces, sand and prime paint.

3.4 Application

.1 Sand and dust between each coat to remove defects visible from a distance up to 1.5 m (5 ft).

.2 Finish bottoms, edges, tops and cut-outs of doors after fitting as specified for door surfaces.

.3 Finish tops of cabinets and projecting ledges, above and below sight lines as specified for surrounding surfaces.

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

.5 Repainted surfaces within already painted areas must colour match existing.

.6 After painting, drawers, window sashes and doors must operate freely.

3.5 Mechanical and Electrical Equipment

.1 Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas including inside cupboards and cabinet work. Colour and texture to match adjacent surfaces, except where noted otherwise.

.2 Paint interior of ductwork where visible with primer and one coat matte black paint.

.3 Paint both sides and edges of plywood backboards for mounting equipment before installation. Leave equipment in original finish except for touch-up as required; paint conduits, mounting accessories and other unfinished items.

3.6 Completion

.1 Remove protection; make good damage to this and adjacent work.

2 Remove materials, debris, tools, plant and equipment from the premises.

3.7 Clean-up

.1 Remove rubbish, rags and oily waste from the site daily and at final completion and keep areas clean.

.2 Upon completion, clean blemished surfaces to the Architect's satisfaction. Repair any damage. Replace hardware plates, drapes, pulls, etc.

.3 Leave building and painted site equipment in a 'cleaned and polished' condition.

To be completed by Contractor before commencing work as verification of Architects colour selection.

APPENDIX A

Project Date
Municipality Page of

1. Submit name of material manufacturer for future maintenance and matching.

   _____

2. List material manufacturers numbers which comply with CAN/CGSB Standard for each primer sealer, paint, varnish, enamel and filler.

Any unauthorized materials will be removed from the site.

_____ _____
Signature/Company Seal Date

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements

.2 Provide materials, labour and equipment for the installation of metal toilet partitions, urinal screen and required accessories as shown on the drawings, described herein or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 07900: Sealant, [co-ordinating work with this section.]

.2 Section 10811: Washroom Accessories, [co-ordinating work with this section and install all washroom accessories attached to partitions.]

1.3 Shop Drawings

.1 Submit [6] copies of shop drawings or catalogue illustrations indicating fabrication details, metal gauges, plans, elevations, hardware and installation details.

PART 2 - PRODUCTS

2.1 Materials

.1 **Galvanized Steel Sheet:** Commercial quality, to ASTM A526/A526 with Z275 zinc coating.

.2 **Steel Sections:** To CAN/CSA -G40.21, Type 44W.

.1 **Quantity, Type and Location:** Provide the following units, Standard headrail braced floor and wall mount partitions.

.2 **Doors & Panels:** 0.76 mm (22 ga) galvanized zinc coated cold rolled steel sheet to A446 Grade A.

.3 **Pilasters:** 1.21 mm (16 ga) galvanized zinc coated cold rolled steel sheet to A446 Grade A.

.4 **Trim:** 1.06 mm (18 ga) galvanized zinc coated cold rolled steel sheet to A446
Grade A.

.3 **Hardware:**

.1 **Hinges:** (1) Continuous stainless steel hinge through bolted with stainless steel bolts and locking arcorn head nuts per door.

.2 **Latch & Bumber:** Single point locking by means of concealed chrome plated slide bolt and 'U' shaped heavy duty anodized aluminum pull. The door shall close with a tight fit on the full length of the strike.

.3 **Wall and Connecting Brackets:** Provide polished aluminum brackets with tamperproof bolts.

.4 **Attachments:** Through male/female type sex bolts with tamperproof heads. Pilaster support plated anchor bolts to be 9mm ($^3/_8$") diameter and connected to pilasters with a uniform single piece channel welded integrally.

.5 **Finish and Colour:** All parts to ASTM B117 high grade factory powder coat finish colour (2) coats plus primer or polyurethane powder coating paint finish, colour as selected by Architect from manufacturers standard colour range.

.6 **Logo:** Universal handicap logo symbol self adhesive vinyl decal to outside face of handicap stall door.

Floor mount overhead braced type

Acceptable Products or equal:

Hadrian	'Anti-graffiti Powder Coat c/w solid dent resistant core, overhead braced.'

2.2 **Fabrication**

.1 **Doors and Panels:** 25 mm (1") thick minimum, two sheet steel faces pressure laminated to honeycomb steel core maximum 25 mm (1") cell grid, mitred, brass welded and brazed formed edges tension interlocked with roll formed oval crown locking bar to form a sealed hygienic unit, to sizes indicated c/w 1/8" solid masonite core for dent resistance.

.2 **Pilasters:** 32 mm ($1^1/_4$") thick minimum, constructed same as door, to sizes indicated.

.3 **Plinth Trim:** 76mm (3") high, 0.76 mm (22 ga) polished stainless steel roll formed trim secured with concealed clips.

.4 **Pilaster Shoes:** 75 mm (3") high, 0.8 mm ($^1/_{32}$") thick, die formed stainless steel.

.5 **Edges:** Formed and closed edges for doors, panels and pilasters. Mitre and weld all corners and grind smooth.

.6 **Reinforcement:** Internally reinforce at areas of attached hardware and fittings. Temporarily mark location of reinforcement for tissue holders and grab bars.

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least [5] days notice to the Architect before starting work.

3.2 Partition Erection (Metal Ceiling Hung)

.1 Provide templates, details and instructions for building in toilet partition anchors.

.2 Install partitions secure, plumb and square. Use male/female through bolts or screws.

.3 Leave 12 mm ($^1/_2$") space between wall and panel or end pilaster.

.4 Attach fixing brackets securely to hollow walls using bolts and toggle type anchors.

.5 Attach panel and pilaster to brackets with through type sleeve bolt and nut or screws.

.6 Provide for adjustment of floor variations with screw jack through steel saddles made integral with pilaster. Conceal floor fixings with stainless steel shoes.

.7 Equip each door with hinges, latch set, and handle. Adjust and align hardware for easy, proper function. Set door open position at 30 degrees to front. Install universal handicap logo symbol decal to outside face of handicap stall door.

.8 Make good or replace powder coated surfaces damaged during shipment and/or installation, to satisfaction of Architect.

3.3 Installation of Accessories and Grab Bars

.1 Locate/re-locate new and existing accessories as indicated on drawings or where directed by the Architect.

.2 Install rigidly and anchor fixtures in place as follows:

.1 Install grab bars with built-in anchors provided in accordance with template, details and instructions by bar manufacturer into solid walls and/or through bolt to partition panel.

.2 Use tamperproof screws/bolts for fastening.

3.4 Clean-up

.1 Remove debris resulting from the work.

.2 Remove protective covering and leave installation in a clean and polished condition.

-End-

PART 1 - GENERAL

1.1 Scope

.1 Comply with Division 1: General Requirements.

.2 Provide materials, labour and equipment for the installation of washroom accessories [including those required in accommodation provided for disabled persons] as shown on drawings, described herein or as necessary to complete the work.

1.2 Related Work Under Other Sections

.1 Section 06200: Finish Carpentry, [co-ordinating work with this section and provide all washroom accessories and grab bars attached to partitions for installation by this section.]

.2 Section 10160: Metal Toilet Compartments, [co-ordinating work with this section and provide all washroom accessories attached to partitions for installation by this section.]

1.3 Shop Drawings

.1 Submit [6] copies of shop drawings or catalogue illustrations indicating size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in-frame and building-in details of anchors for grab bars.

PART 2 - PRODUCTS

2.1 Materials:

.1 **Sheet Steel:** Commercial grade, stretcher levelled sheet steel to ASTM A526/A526M-85 with G90 zinc coating to ASTM A525M.

.2 **Stainless Steel Sheet:** To ASTM A666, Type 302, No. 4 finish.

.3 **Steel Tubing:** 25 mm (1") OD tubing of 1.2 mm ($^{1}/_{16}$") wall thickness.

.4 **Fasteners:** Stainless steel tamperproof screws and bolts torx or 2 hole snake eyes type; expansion shields, butterfly, lead or eazy anchor type, as recommended by fixture manufacturer.

2.2 Finishes:

.1 **Chrome and Nickel Plating:** To ASTM B456 polished finish.

.2 **Stainless Steel:** To ASTM A666, Type 302, No. 4 finish, minimum 0.8 mm thick.

.3 **Baked Enamel:** To product manufacturers standard. Colour selected from standard range by the Architect.

.4 **Manufacturers or Brand Names:** Not acceptable on exposed faces.

2.3 **Washroom Accessories:** Provide the following accessories as supplied by Bobrick Washroom Equipment and Frost as noted.

.1 **Room 110F New Universal Washroom:** toilet roll dispenser, paper towel dispenser and soap dispenser units supplied by owner installed by general contractor, (**1**) grab bar 38 x 760 mm x 760mm 'L' ($1^1/_2$"x 30" x 30") concealed mount/snap flange, peened grip *B-6898.99*, (**1**) grab bar 38 x 600 mm ($1^1/_2$"x 24") concealed mount/snap flange, peened grip *B-6206.99x24*, (**1**) swing-up grab bar, peened grip *B-4998.99*, (**1**) surface mount stainless steel framed tilt mirror over sink 460 wide x 910 high mm (18"x 36") *B-293 -1836,* (**1**) surface mount stainless steel shelf over sink 205 deep x 610 wide mm (8"x 24") *B-298x24,* (**2**) surface mount coat hooks *F-1150-SS*, (**1**) surface mount waste receptacle *F-326,* (**1**) surface mount sanitary Napkin Disposal *F-620*.

.2 **Room 114, 124 Existing Girl's Washroom:** toilet roll dispenser, paper towel dispenser and soap dispenser units supplied by owner installed by general contractor, (**2**) surface mount stainless steel framed mirror 600 wide x 910 high mm (24"x 36") *B-290-2436,* (**2**) surface mount stainless steel framed tilt mirror 460 wide x 910 high mm (18"x 36") *B-293 -1836,* (**12**) surface mount coat hooks *F-1150-SS*, (**2**) surface mount waste receptacle *F-326,* (**2**) grab bar 38 x 760 mm x 760mm 'L' ($1^1/_2$"x 30" x 30") concealed mount/snap flange, peened grip *B-6898.99*, (**2**) grab bar 38 x 600 mm ($1^1/_2$"x 24") concealed mount/snap flange, peened grip *B-6206.99x24,* (**12**) surface mount sanitary Napkin Disposal *F-620*.

.3 **Room 116, 126 Existing Boy's Washroom:** toilet roll dispenser, paper towel dispenser, and soap dispenser units supplied by owner installed by general contractor, (**2**) surface mount stainless steel framed mirror 600 wide x 910 high mm (24"x 36") *B-290-2436,* (**2**) surface mount stainless steel framed tilt mirror 460 wide x 910 high mm (18"x 36") *B-293 -1836,* (**4**) surface mount coat hooks *F-1150-SS*, (**2**) surface mount waste receptacle *F-326,* (**2**) grab bar 38 x 760 mm x 760mm 'L' ($1^1/_2$"x 30" x 30") concealed mount/snap flange, peened grip *B-6898.99*, (**2**) grab bar 38 x 600 mm ($1^1/_2$"x 24") concealed mount/snap flange, peened grip *B-6206.99x24*.

.4 **Room 118, 120 Existing Staff Washroom:** toilet roll dispenser, paper towel dispenser and soap dispenser units supplied by owner installed by general contractor, (**2**) surface mount stainless steel framed mirror over sink 460 wide x 910 high mm (18"x 36") *B-290 -1836,* (**2**) surface mount stainless steel shelf over sink 205 deep x 610 wide mm (8"x 24") *B-298x24,* (**2**) surface mount waste receptacle *F-326,* **(2**) surface mount coat hooks *F-1150-SS mount one in each washroom at centre of back of door at 4'-0" to centre from finished floor*, (**2**) surface mount sanitary Napkin Disposal *F-620*

Other Acceptable Manufactures: All products must be equal to base bid above.
ASI
Frost
Watrous

2.4 **Fabrication**

.1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.

.2 Wherever possible, form exposed surfaces from one sheet of stock, free of joints.

.3 Brake form sheet metal work with 1.5 mm ($^{1}/_{16}$") radius bends.

.4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.

.5 Back paint components where contact is made with other building finishes to prevent electrolysis.

.6 Hot dip galvanize ferrous metal anchors and fastening devices to CAN/CSA-G164-M1981.

.7 Shop assemble components and package complete with anchors and fittings.

.8 Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates or rough-in measurements as required.

.9 Provide steel anchor plates and components for installation on studding and building framing.

PART 3 - EXECUTION

3.1 **General**

.1 Installation by Sections listed above.

.2 **All toilet roll holders, paper towel units and soap dispensers, supplied by owner or relocated from existing rooms to be installed by General Contractor for all rooms indicated and as shown on the drawings.**

-End-