HOLY FAMILY CARPET & MILLWORK REPLACEMENT

SIMCOE MUSKOKA CATCHOLIC DISTRICT SCHOOL BOARD

HOLY FAMILY CATHOLIC ELEMENTARY SCHOOL

(180 KING ST. SOUTH, ALLISTON, ON L9R 1B9)

ISSUED FOR TENDER

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1 SUMMARY OF WORK

.1 The project is:

.1 Holy Family Catholic School, carpet and millwork replacement to the Site located at 180 King St. South, Alliston, ON L9R 1B9.

.2 Work by Owner comprises the following:

.1 Installation of Owner equipment and furnishings unless otherwise indicated on the drawings and specifications.

.3 The words 'by others' when used in the Specifications or in the Drawings shall not mean by someone other than the Trade Contractor. The only means by which something shown or specified shall be indicated as not being in the Contract is by the use of the initials 'NIC' or the words 'Not In (the) Contract' or 'By Owner'.

.4 Construction Schedule:

.1 It is anticipated the construction scope of work will commence by June 27, 2026 or earlier with the expectation that Substantial Performance and Occupancy will be achieved by August 28, 2026. Academic activities at the school facility will commence August 31, 2026.

2 WORK RESTRICTIONS

.1 Contractor's Use of Site

.1 Use of site is restricted to the areas designated on the drawings for execution of the Work. Do not unreasonably encumber site with materials or equipment. Move stored products or equipment which interfere with operations of Owner, or other contractors. Obtain and pay for use of off-site additional storage, or work areas as required by the Work.

.2 Hours of Work

.1 Hours of work for this Contract are generally confined to regular daily business hours of 7:00am to 5:00pm, Monday to Friday. Where required by sequencing of the Work, portions of the Work may be required to be performed outside of regular daily business hours, or on weekends, but shall be performed at such times at no additional cost to the Owner.

.2 Once the building is occupied, Contractor access to the building to perform Work to Correct deficiencies or to perform warranty is restricted and work must be done after hours. School day start time is 7:00AM and end of daytime is 4:00PM.

3 OFF SITE WORK

.1 All work beyond property lines, adjacent to the site, is included in Contract unless noted otherwise.

4 EXISTING CONDITIONS

.1 The Contractor shall be responsible for conducting an on-site evaluation of conditions which can be observed and for correlation of these conditions with the information included under this section.

.2 Information contained in documents listed here may be used by the Contractor to assist in an assessment of existing conditions. Evaluation of

the information shall remain the responsibility of the Contractor.

.3 Hazardous Materials including asbestos may be present on this project. Designated Substances are documented in the report below.

.1 Report Title: Designated Substances And Hazardous Building Materials Assessment Report
Prepared by: Safetech Environmental Limited
Report Date: February 3, 2026

.4 If materials suspected of containing asbestos and/or other designated substances are encountered during the course of work, institute the following emergency procedure:

.1 Do not clean up, cover, move or contact suspect materials.
.2 Isolate the immediate work area by locking doors or installing barricades.
.3 Notify the Board of situation.
.4 The Board will arrange to have the suspect materials analyzed to determine if the materials contain designated substances. If so, the Board will provide further direction.
.5 Work that may disturb the suspect materials may only continue with the Board's approval.

5 INSURANCE

.1 The Contractor shall provide, maintain, and pay for the insurance coverages specified below. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the Work until the expiration of the warranty periods set out in the Contract Documents. Prior to commencement of the Work and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the Contractor shall promptly provide the Owner with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.

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.1 General Liability Insurance

General liability insurance shall be in the name of the Contractor, with the Owner and the Consultant named as Additional insureds, with limits of not less than $10,000,000.00 inclusive per occurrence for bodily injury, death, and damage to property, including loss of use thereof, for itself and each of its employees, Subcontractors and/or agents. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards for a period of 6 years following Total Completion of the Work. Where the Contractor maintains a single, blanket policy, the Addition of the Owner and the Consultant is limited to liability arising out of the Project and all operations necessary or incidental thereto. The policy shall be endorsed to provide the Owner with not less than 30 days' notice, in writing, in advance of any cancellation and

of change or amendment restricting coverage.

.2 Automobile Liability Insurance

Automobile liability insurance in respect of licensed vehicles shall limits of not less than $5,000,000.00 inclusive per occurrence for bodily injury, death and damage to property, covering all licensed vehicles owned or leased by the Contractor, and endorsed to provide the Owner with not less than 30 days' notice, in writing, in advance of any cancellation, change or amendment restricting coverage. Where the policy has been issued pursuant to a government-operated automobile insurance system, the Contractor shall provide the Owner with confirmation of automobile insurance coverage for all automobiles registered in the name of the Contractor.

.3 Property and Boiler and Machinery Insurance

.1 Builder's Risk property insurance shall be in the name of the Contractor with the Owner and the Consultant named as Additional insureds. The policy shall insure against all risks of direct physical loss or damage to the property insured which shall include all property included in the Work, whether owned by the Contractor or the owner or owned by others, so long as the property forms part of the Work. The property insured also includes all materials and supplies necessary to complete the work, whether installed in the work temporarily or permanently, in storage on the project site, or in transit to the project site, as well as temporary buildings, scaffolding, falsework forms, hoardings, excavation, site preparation and similar work. The insurance shall be for not less than the sum of the amount of the contract price and the full value of products that are specified to be provided by the owner for incorporation into the work, if applicable, with the deductible of $10,000.00 payable by the contractor. The coverage shall be based on a completed value form and shall be maintained continuously until ten (10) days after the date of the final certificate of payment.

.2 Boiler and machinery insurance shall be in the name of the Contractor, with the Owner and the Consultant named as Additional insureds, for not less than the replacement value of the boilers, pressure vessels and other insurable objects forming part of the Work. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 10 days after the date of the final certificate for payment.

.3 The policies shall allow for partial or total use or occupancy of the Work.

.4 The policies shall provide that, in the case of a loss or damage, payment shall be made to the Owner and the Contractor as their respective interests may appear. The Contractor shall act on behalf

of the Owner for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the Contractor shall proceed to restore the Work. Loss or damage shall not affect the rights and obligations of either party under the Contract except that the Contractor shall be entitled to such reasonable extension of the Contract Time, relative to the extent of the loss or damage, as determined by the Owner, in its sole discretion.

.5 The Contractor shall be entitled to receive from the Owner, in Addition to the amount due under the Contract, the amount at which the Owner's interest in restoration of the Work has been appraised, such amount to be paid as the restoration of the Work proceeds and as provided in APPLICATIONS FOR PROGRESS PAYMENT and – PROGRESS PAYMENT. In Addition, the Contractor shall be entitled to receive from the payments made by the insurer the amount of the Contractor's interest in the restoration of the Work.

.5 Contractors' Equipment Insurance

"All risks" contractors' equipment insurance covering construction machinery and equipment used by the Contractor for the performance of the Work, excluding boiler insurance, shall be in a form acceptable to the Owner and shall not allow subrogation claims by the insurer against the Owner. The policies shall be endorsed to provide the Owner with not less than 30 days' notice, in writing, in advance of cancellation, change or amendment restricting coverage. Subject to satisfactory proof of financial capability by the Contractor for self-insurance of his equipment, the Owner agrees to waive the equipment insurance requirement.

.2 The Contractor shall be responsible for deductible amounts under the policies.

.3 Where the full insurable value of the Work is substantially less than the Contract Price, the Owner may reduce the amount of insurance required to waive the course of construction insurance requirement.

.4 If the Contractor fails to provide or maintain insurance as required by the Contract Documents, then the Owner shall have the right to provide and maintain such insurance and provide evidence of same to the Contractor. The Contractor shall pay the costs thereof to the Owner on demand, or the Owner may deduct the amount that is due or may become due to the Contractor.

.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the Place of the Work

END OF SECTION

1 GENERAL

.1 Include all allowances listed below in the Bid Price.

.2 Expend Cash Allowances as directed by the Owner.

.3 Each Cash Allowance will be adjusted to actual cost as defined hereunder and Contract Price will be amended accordingly by written order.

.4 Prepare Cash Allowance schedule jointly with Owner and Owner to show when items called for under cash allowances must be authorized by Owner for ordering purposes so that progress of Work will not be delayed.

.5 Progress payments for work and material authorized under Cash Allowances will be made in accordance with PAYMENT PROCEDURES Section 01 29 00.

.6 Only when the Total Value of the Cash Allowances is exceeded will the Contractor be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.

.7 Include progress payments on accounts of Work authorized under Cash Allowances in Owner's monthly certificate for payment.

.8 Prepare cash allowance schedule to show when items called for under cash allowances must be authorized for ordering purposes so that progress of Work will not be delayed

2 MATERIAL ALLOWANCES (SUPPLY ONLY)

.1 Material cash allowance shall include and provide payment for:

.1 Net cost of material.
.2 Applicable duties and taxes.
.3 Delivery to the Place of the Work.
.4 Handling at the Place of the Work, including unloading, uncrating, storage and hoisting.
.5 Protection from damage by elements or otherwise.
.6 Overhead and profit.

.2 Include in the Bid Price, in addition to the material cash allowance, costs for the following:

.1 Labour for installation and finishing.
.2 Other expenses required to complete installation.
.3 Overhead and Profit.

3 ASSEMBLY ALLOWANCES (SUPPLY AND INSTALL)

.1 Assembly cash allowance shall include and provide payment for:

.1 Net cost of material.
.2 Applicable duties and taxes.
.3 Delivery to the Place of the Work.
.4 Handling at the Place of Work, including unloading, uncrating, storage and hoisting.
.5 Protection from damage by elements or otherwise.
.6 Labour installation and finishing.
.7 Other expenses to complete installation.

.8 Overhead and profit.

.2 Include in the Bid Price any overhead and profit or related General Contractor costs.

4 ALLOWANCE AMOUNTS

.1 The Total Cash Allowance to be included in the Stipulated Price is Five Thousand Dollars ($5,000.00) in Canadian funds.

.2 The Cash Allowance shall cover the following (in general):

.1 Finish Hardware - Supply of finish hardware for teacher's closet doors - installation by others.

.3 Unexpended amounts of Cash Allowances may be reallocated to other work at the sole discretion of the Owner.

END OF SECTION

1 CHANGES IN THE WORK

.1 The Board, without invalidating the Contract, may make changes by altering, adding to or deducting from the work, the Contract price shall be adjusted accordingly. All such charges to the work shall be executed under the conditions of this Contract. No change shall be made unless in pursuance of a written order signed by the Board.

.2 The value of a change shall be determined in one or more of the following methods as directed by the Owner:

.1 by estimate and acceptance of a lump sum;

.2 by negotiated unit prices which include the *Contractor's* overhead and profit, or;

.3 by the actual *Direct Cost* to the *Owner,* such costs to be the actual cost after all credits included in the change have been deducted, plus the following ranges of mark-up on such costs:

.1 for *Change Orders* with a value of $0 to $15,000 the total *Subcontractor/Supplier* mark-up including *Overhead* and profit shall be 10% and the total *Contractor* mark-up including overhead and profit shall be 5%.

.2 for *Change Orders* in excess of $15,000, the total *Subcontractor/Supplier* mark-up including *Overhead* and profit shall be 5% and the total *Contractor* mark-up including *Overhead* and profit shall be 3%.

.4 All quotations will be submitted in a complete manner listing:

.1 quantity of each material,
.2 unit cost of each material,
.3 man hours involved,
.4 cost per hour,
.5 Subcontractor quotations submitted listing items 1to 4 above and item 6 below.
.6 mark-up

.3 The Owner will not be responsible for delays to the Work resulting from late, incomplete or inadequately broken-down valuations submitted by the Contractor."

END OF SECTION

1 APPLICATIONS FOR PAYMENT

.1 Applications for payment on account shall be made on a monthly basis and submitted to the Project Manager for review.

.2 Upon acceptance of the application for payment, the invoice shall be submitted to

Simcoe Muskoka Catholic District School Board
46 Alliance Boulevard Barrie, Ontario
L4M 5K3
accounting@smcdsb.on.ca

.3 The second and all subsequent applications for payment shall include a statement based on the Schedule of Values and a standard Workers Compensation Certificate of Clearance.

2 SCHEDULE OF VALUES

.1 Submit Schedule of Values in spreadsheet form acceptable to the Owner.

.2 Identify on each Schedule of Values, the following information:
- .1 Date of Issue
- .2 Project name
- .3 Owner's name
- .4 Contractor's name
- .5 Payment period
- .6 Payment certificate number

.3 Items of work listed shall include, but not be limited to, separate line items for the following:
- .1 General Accounts
- .2 Mobilization
- .3 Supervision
- .4 Bonds and Insurance
- .5 Permits and Licenses
- .6 Operations and Maintenance Manuals/As-Built Drawings
- .7 All trades or portions of the Work, generally in chronological order
- .8 Provision of other Products and/or services
- .9 Cash Allowance expenditures
- .10 Changes in the Work

.4 The total Contract amount for each trade or portion of the Work shall be listed beside each item.

.5 For the purpose of monthly payments, the following values shall be assigned for Operation and Maintenance Manuals and Contractor created Redline and Final electronic As-Built Drawings.
- .1 Architectural Maintenance Manuals: $2500.00
- .2 Architectural Redline As-Built Drawings: $2500.00

.6 The Values of the Work shall be listed as to the aggregate percentage and dollar value completed, under the following major headings:
- .1 Initial Contract Amounts for each line item
- .2 Progress to Date,

.3 Percent Complete,
.4 Current Holdback Applied,
.5 Current Invoice less Holdback
.6 Current Invoice,
.7 Previous Billings,
.8 Contract Balance

.7 Work shall be sub-totaled under original Contract amounts, Cash Allowance expenditures, and Changes to the Work.

.8 Final totals shall identify:
.1 Total amount
.2 Holdback deducted
.3 Holdback released
.4 Amount invoiced to date
.5 Net amount
.6 HST
.7 Amount due this Certificate

.3 PROJECT-SPECIFIC REQUIREMENTS FOR A “PROPER INVOICE”

.1 To satisfy the requirements for a Proper Invoice, the following criteria, as may be applicable in each case, must be included with the Contractor’s application for payment:

.1 the written bill or request for payment must be in writing;
.2 the Contractor’s name and current address;
.3 the Contractor’s HST registration number;
.4 the date the application for payment was prepared by the Contractor;
.5 the period of time in which the services or materials were supplied to the Owner.
.6 the purchase order number provided by the Owner;
.7 reference to the provisions of the Contract under which payment is being sought. (e.g. PAYMENTS for progress payments, SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK, FINAL PAYMENT for final payment, etc.);
.8 a description, including quantities where appropriate, of the services or materials, or a portion thereof, that were supplied and form the basis of the Contractor’s request for payment;
.9 the amount the Contractor is requesting to be paid by the Owner, set out in a statement based on the approved schedule of values, separating out any statutory or other holdbacks, set-offs and HST;
.10 a sworn Statutory Declaration form for second and subsequent progress payments;
.11 a current Workplace Safety Insurance Board clearance certificate;
.12 a pre-approved schedule of values, supplied by the Contractor, for Divisions 1 through 14 of the Specifications (or equivalent Construction Specifications Institute Masterformat) of the Work, aggregating the total amount of the Contract Price, including all supporting invoicing;
.13. a separate pre-approved schedule of values, supplied by each Subcontractor, for each of Division 15, 16, and 17 of the Specifications (or

equivalent Construction Specifications Institute Masterformat) of the Work, aggregating the total amount of the Contract Price, including all supporting invoicing;

.14 invoices and other supporting documentation for all claims against the cash allowance;

.15 a current, acceptable, and up to date Construction Schedule Update;

.16 if requested by the Owner, a current and valid certificate(s) of insurance;

.17 the name, title, telephone number and mailing address of the person at the place of business of the Contractor to whom payment is to be directed;

.18 a current, up to date, and approved Shop Drawing log;

.19 in the case of the Contractor's application for final payment, in addition to the foregoing requirements (as applicable):

(a) any Close-Out Documentation, together with complete and final as-built drawings;

(b) the Contractor's written request for release of the Deficiency Holdback including a statement that no written notices of lien have been received by it;

(c) the Contractor's written certification that there are no outstanding claims, pending claims or future claims from the Contractor or their Subcontractors or Suppliers.

END OF SECTION

1 PROJECT MANAGEMENT & COORDINATION

.1 Project Coordination

.1 The Contractor is responsible for the overall coordination of the Work. Coordinate the work of all subcontractors, and provide such assistance as is necessary, including but not limited to;

.1 Providing site dimensions and layout,
.2 Providing temporary facilities and controls,
.3 Scheduling subcontractors work to prevent conflicts,
.4 Scheduling and administering regular sub-trade scheduling and coordination meetings throughout progress of the Work.
.5 Scheduling and administering regular sub-trade safety meetings throughout progress of the Work.
.6 Coordinate construction sequences and schedules including all components of the Work, including all Divisions with interdependent responsibilities.

.2 The Contractor shall provide and facilitate production of interference drawings for coordination of the Work. Provide such interference drawings to the Owner for review.

.2 Project Supervision

.1 Provide full-time supervision**.**

.2 Supervision shall be provided until Total Completion is achieved and the deficiencies have been completed or otherwise agreed with the Owner.

.3 The supervisor shall be responsible for the overall day-to-day coordination on site between all subcontractors, and provide such assistance as is necessary, including but not limited to;

.1 Layout,
.2 Rough carpentry work for blocking, strapping, nailers, etc.

.3 Project Meetings

.1 Attend all regular bi-weekly project progress meetings throughout progress of work.

.2 The Contractor shall be called upon to report on progress of the work at each bi-weekly progress meeting. At a minimum, they shall submit within 2 days prior to the meeting, written documentation with status of the following:

.1 2-week review of work completed
.2 2 weeks look ahead schedule for work upcoming
.3 Shop Drawings and Submittals Log
.4 RFI and RFCO status logs
.5 PCN and CO status logs

.3 The Contractor shall chair separate Sub-Trade bi-weekly project progress meetings between the Contractor and all Sub-trades, and shall record and distribute same to Owner, and Consultants.

.4 Project Site Administration

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

.1 Contract drawings.
.2 Project manual.
.3 Addenda and Bid Revisions.
.4 Reviewed shop drawings.
.5 Change orders and other Contract modifications.
.6 Field test and inspection reports.
.7 Approved schedules.
.8 Manufacturer's installation and application instructions.

2 SCHEDULES

.1 Construction Progress Schedule.

.1 Provide construction schedule on a monthly basis or as requested by the Owner. Schedule must utilize "critical path" method.

.2 Indicate separate line for each trade or operation of the Work. Arrange trades in chronological order for commencement of that part of the Work. Critical Path work to be clearly identified.

.3 Identify projected major milestones in the course of the Work such as:

.1 Completion of flooring
.2 Completion of millwork installation
.3 Substantial Performance
.4 Final Cleaning
.5 Deficiency Correction, etc.

.2 Submittal Schedule

.1 Provide schedule for submittal of all Shop Drawings, Product Data and Samples.

.2 Provide complete list of all manufactured products to be used in the course of the Work, including those amended by addenda.

.3 Submission of Schedules

.1 Submit one copy of each schedule to the Owner for review, prior to first progress billing. Amend schedule as required.

.2 Submit 4 copies of each subsequent issue of schedules to the Owner.

.3 Update schedule on a regular basis or as requested by the Owner.

3 SUBMITTAL PROCEDURES

.1 Submit to Owner, all items specified for review, with reasonable promptness and in orderly sequence so as to not cause delay in the Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 The Contractor shall schedule a minimum of 10 working days for the Owner to review each submission. This shall also apply to subsequent resubmissions.

.3 Do not proceed with work affected by the submittal until review is complete.

.4 Review all submittals prior to submission to the Owner. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the Work and the Contract Documents. Submittals not stamped, signed, and dated by the Contractor will be returned without review.

.5 Verify field measurements and affected adjacent work are coordinated.

.6 Contractor's responsibility for errors and omissions in submission, or deviations from requirements of Contract Documents, is not relieved by Owner's review.

.7 Keep one reviewed copy of each submission on site.

.8 Shop Drawings

.1 Contractor shall provide Shop Drawings to the Owner to review in orderly sequence and sufficiently in advance so as to cause no delay in the Work or in the work of other contractors.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of the Section under which the adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Adjustments made on shop drawings by the Owner are not intended to change the Contract Price. If adjustments affect the value of the Work, the Contractor shall state such in writing to the Owner within five (5) business days of receipt of the reviewed shop drawings. The Contractor shall not proceed with the Work requiring adjustment in price without prior approval by the Owner. The Owner will not be responsible for any resulting delays in construction because of delayed notice.

.4 Make changes to shop drawings as the Owner may require, consistent with Contract Documents. When resubmitting, notify the Owner in writing of any revisions other than those requested. Any work completed for adjustments without Owner prior approval is at the Contractor’s expense and as such, the Owner will not be subject to increased costs to the contract.

.5 Shop drawings shall be submitted electronically wherever possible. Files shall be in PDF format only.

.6 Shop drawings submitted by FAX, or as copies of FAX transmissions are not acceptable as shop drawings and will not be reviewed.

.7 Reproductions of Owners’ drawings are not acceptable for the purpose of creating Shop Drawings. Any drawings submitted for review which contain drawings or any parts of drawings produced by the Owner, will be rejected. The Owner will not take responsibility for any resulting delays in construction as a result of the above.

.8 Shop drawings not submitted in the scale type of the contract documents (ie, metric for metric drawings) will not be reviewed.

.9 Product Data Sheets

.1 Manufacturer's standard schematics, catalogue sheets, diagrams, schedules, performance charts, illustrations and other descriptive data are acceptable in lieu of shop drawings, where specified.

.2 Product Data Sheets are acceptable provided they conform to the following:

.1 Information not applicable to project has been deleted.
.2 Supplement standard information to provide additional information applicable to project.
.3 Show dimensions and clearances required.
.4 Show performance characteristics and capacities.
.5 Show wiring diagrams, when requested, and controls.

.3 Submit product data sheets or brochures for requirements requested in specification Sections and as the Owner may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.

.4 Submit Product Data Sheets.

.5 Product data sheets submitted by FAX, or as copies of FAX transmissions will not be accepted.

.10 Return of Submissions

.1 If shop drawings or data sheets are rejected, noted copy will be returned and resubmission of corrected shop drawings or data sheets through the same procedure indicated above, shall be performed before fabrication and installation of Work may proceed.

.11 Samples

.1 Submit samples for review, in duplicate, in sizes requested in respective specification sections. Label samples as to origin and intended use in the Work.

.2 Where colour, pattern or texture are criteria, submit full range of samples.

.3 Deliver samples prepaid to Owner's office.

.4 Notify the Owner in writing, at the time of submission of deviations in samples from requirements of Contract Documents.

.5 Adjustments made on samples by the Owner are not intended to change the Contract Price. If adjustments affect the value of the Work, the Contractor shall state such in writing to the Owner within five (5) business days of receipt of the reviewed shop drawings. The Contractor shall not proceed with the Work requiring adjustment in price without prior approval by the Owner. The Owner will not be responsible for any resulting delays

in construction because of delayed notice. Any work completed for adjustments without Owner prior approval is at the Contractor's expense and as such, the Owner will not be subject to increased costs to the contract.

.6 Make changes in samples, which the Owner may require, consistent with Contract Documents.

.7 Reviewed samples or mock-ups will become standards of workmanship and material against which installed work will be checked on project.

.12 Submission Requirements

.1 Accompany submissions with transmittal letter containing:

.1 Date,
.2 Project title and number,
.3 Contractor's name and address,
.4 Drawing/page numbers of each shop drawing or data sheet,
.5 Identification (ie. "Structural Steel Shop Dwgs."), and
.6 Number of copies submitted.

.2 Submissions shall include (where applicable):

.1 Date and revision date,
.2 Project title and number,
.3 Name of Contractor, Subcontractor(s), Supplier/Manufacturer,
.4 Identification of product or material,
.5 Relation to adjacent structure or materials,
.6 Field dimensions, clearly identified as such,
.7 Reference standards (CSA, CGSB, ASTM, etc.), and
.8 Contractor's stamp, initialed or signed, certifying review of submission, and verification of field measurements.

.13 Distribution of Submittals after Review

.1 Distribute copies of shop drawings and product data as follows (where applicable):

.1 Job site file (Record documents),
.2 General Contractor's office,
.3 Subcontractors, and
.4 Suppliers or Fabricators.

END OF SECTION

1 GENERAL

.1 Provide construction photographs in accordance with procedures and submission requirements specified in this section.

.2 Photographs shall be taken using a digital camera.

.3 Photographs shall be named and grouped by date using the following file name format: **Holy Family Catholic_School_P00821** - YYYY_MM_DD (##).jpeg

2 PROGRESS PHOTOGRAPHS

.1 Provide 1 digital set of construction photographs, documenting progress of the Work. Submit one digital set with each monthly progress draw.

.2 Submit progress photographs with each monthly progress draw, and at the following milestones;

.1 Completion of excavation and pouring of footings, including founding elevation of underside of footing excavation.
.2 Completion of foundations prior to backfilling.
.3 Completion of structural frame.
.4 Completion of rough-in of mechanical and electrical services before concealment.
.5 Completion of roofing membrane.
.6 Completion of each major portion of Work.
.7 Completion of each major finish item.

.3 Orientation of Photographs: provide photos from a minimum of 4 general viewpoints, as well as specific views as required by milestones specified above, and as determined by Owner prior to first Progress Draw.

3 FINAL PHOTOGRAPHS

.1 Submit full digital set of construction photographs taken during course of Work with Operations & Maintenance Manuals at the completion of the project.

.2 Orientation of Photographs: provide final photos as follows:

.1 General viewpoints as defined above,
.2 Views of all exterior elevations,
.3 One view from each street,
.4 Views of site showing parking areas and play surfaces,
.5 Interior views of all major spaces,
.6 One set of views of a typical room,
.7 Specific views as determined by Owner (Max. 48 views).

END OF SECTION

1 GENERAL

1.1 SECTION INCLUDES
- .1 Requirements for quality of work.
- .2 Requirements for material inspection and testing.
- .3 Requirements for determination of defective materials and work.

1.2 REFERENCE STANDARDS
- .1 CSA A23.1; Concrete Materials and Methods of Concrete Construction.
- .2 CSA A23.2; Methods of Test for Concrete.
- .3 CSA S16.1; Limit States Design of Steel Structures.
- .4 CSA W47.1; Certification of Companies for Fusion Welding of Steel Structures.
- .5 CSA W59; Welded Steel Construction (Metal Arc Welding).
- .6 CISC; Code of Standard Practice for Structural Steel.
- .7 OPSS; Ontario Provincial Standard Specifications.

1.3 REGULATORY REQUIREMENTS
- .1 Products and services provided to complete the Work shall meet or exceed requirements of specified standards, municipal by-laws, building codes and referenced documents.

1.4 INDEPENDENT INSPECTION AND TESTING
- .1 Independent Inspection and Testing Consultant will be engaged by the Owner for the purpose of inspecting and/or testing individual portions of the Work. The initial cost of such services will be borne by the Owner.

1.5 RESPONSIBILITIES
- .1 Inspection and Testing Consultants
  - .1 Inspection and Testing Consultant shall;
    - .1 Provide inspection and testing specified,
    - .2 Inform the Contractor, Consultant and Owner upon observance of materials, systems, or procedures not in compliance with the specifications, and
    - .3 Submit complete reports to the Contractor, Consultant and Owner in a timely manner.
- .2 Contractor
  - .1 Contractor shall:
    - .1 Provide access to the Work for Inspection/Testing Consultant, and
    - .2 Inform the Inspection/Testing Consultants in advance of day and time required for inspection and tests.
  - .2 It is the responsibility of the General Contractor to ensure the quality control requirements of the Contract are implemented.
  - .3 Costs for any additional inspections resulting from contractor's failure to correct deficient work in previous inspections will be borne by the General Contractor.

1.6 ACCESS TO WORK
- .1 Allow Inspection & Testing Consultant's access to the Work, as well as off-site manufacturing and fabrication plants.

1.7 REPORTS

.1 Submit three copies of inspection and test reports to the Owner.

.2 Provide copies to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

.3 Submit one copy of inspection and test reports to the Building Official having jurisdiction, where required by that official.

.4 The cost of tests beyond those called for in the Contract Documents or beyond those required by the law of the Place of Work shall be appraised by the Owner and may be authorized as recoverable at the discretion of the Owner.

2 PRODUCTS

(RESERVED)

3 EXECUTION

3.1 INSPECTION AND TESTING - GENERAL

.1 Furnish test results and mix designs as may be requested.

3.2 INSPECTION AND TESTING - PROCEDURES

.1 Notify the Inspection & Testing Consultant and Owner in advance of the requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store, cure and inspect test samples.

3.3 QUALITY OF THE WORK

.1 Quality of the Work shall be first class, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Owner if required work is such as to make it impractical to produce required results.

.2 Do not employ any unfit person or anyone unskilled in their required duties. The Owner reserves the right to require the dismissal from the site, of workers deemed incompetent, careless, insubordinate or otherwise objectionable.

3.4 DEFECTIVE MATERIALS AND WORK

.1 Where evidence exists that defective work has occurred, or that work has been carried out incorporating defective products, the Owner may have independent tests, inspections, or surveys performed in order to determine if work is defective. Tests, inspections, or surveys carried out under these circumstances will be provided at the Contractor's expense in the event of defective work. Where tests incorporate a number of samples, payment will be assessed, by the Owner, based on the ratio of conforming to non-conforming results. This does not include

re-testing of soil compaction during placement, unless where evidence exists that failure to meet required compaction is because of non-conformance with the Contract documents or by negligence of the contractor.

END OF SECTION

1 GENERAL

1 SECTION INCLUDES
- .1 Codes and Standards.
- .2 Authority Having Jurisdiction.
- .3 Health and Safety Guidelines for Work in Occupied Buildings.
- .4 Permits and Fees.
- .5 Relics, Antiquities and Human Remains.

2 CODES AND STANDARDS
- .1 Codes
  - .1 All construction shall conform to the Ontario Building Code, the National Building Code (NBC) and the National Fire Code (NFC) latest editions including all supplements and amendments.
  - .2 Conform to all other codes, by-laws and regulations as specified within individual sections of the specifications.
- .2 Industry Standards
  - .1 Industry Standards are specified within individual sections as applicable to those portions of the Work. The latest editions of all industry standards shall be the standards for which quality of work shall be assessed.
  - .2 Comply with all relevant codes, standards and industry-accepted practices, as specified herein, or as applicable to the Work.

3 AUTHORITIES HAVING JURISDICTION
- .1 The Chief Building Official of the Municipality of the Place of the Work, is the primary Authority Having Jurisdiction for compliance with all codes, by-laws and regulations as they apply to all construction.
- .2 Other Authorities Having Jurisdiction may be required to review and approve certain portions of the Work. The Chief Building Official of the Municipality of the Place of the Work, will determine the requirements for such involvement.

4 HEALTH AND SAFETY GUIDELINES FOR WORK IN OCCUPIED BUILDINGS
- .1 In addition to all Occupational Health and Safety Act and Regulations for Construction Projects (2000) (Ontario Regulation 213/91, amended by Reg. 631/94, & Reg. 145/00) and by all authorities having jurisdiction, when applicable the Contractor shall conform with requirements of Section 01 41 10 - SMCDSB Health and Safety Guidelines for Work in Occupied Buildings.

5 PERMITS AND FEES
- .1 No construction work may commence without a valid, posted Building Permit unless authorization otherwise is granted by the Authority Having Jurisdiction.
- .2 The Owner is responsible for obtaining all necessary information and applying for the Building Permit, including payment of associated fees. Contractor is responsible for obtaining the building permit.
- .3 The Contractor is responsible for applying for, and obtaining all necessary permits, licenses, or certificates required by the Work.

.4 Authorities Having Jurisdiction may levy fees for issuing permits, licenses, or certificates under their jurisdiction. The Contractor shall pay all such fees as required and shall include the cost of such fees in their Contract Price.

.5 Furnish certificates and permits from other Authorities Having Jurisdiction when so requested by the Owner.

.6 Prior to commencement of construction, post the Building Permit at the Place of the Work.

6 RELICS, ANTIQUITIES AND HUMAN REMAINS

.1 Comply with the General Conditions of the Contract with respect to relics, antiquities, and human remains.

.2 Isolate and protect human remains, relics, antiquities, items of historical, archeological or scientific interest such as cornerstones, commemorative plaques, inscribed tablets and other similar objects found during the course of the Work.

.3 If such items are discovered in the course of construction, stop work in the immediate vicinity and give immediate notice to the Owner as to the nature of the discovery, and await written instructions before proceeding with work in the area.

.4 Resume work only after the conclusion of any inspection and evaluation by experts engaged by the Owner, and only after being given permission to do so.

.5 Relics, antiquities and items of historical or specific interest remain the Owner's property.

END OF SECTION

Note: the health and safety guidelines in this section are applicable additional requirements of the contract when construction is occurring in school building during the occupied time of the full week preceding Labour Day weekend to the end of the first full week in July.

1 WORK SITE LOCATION

.1 Hours of operations for the construction in unoccupied areas may occur during the regular work week hours with the following exception, odor-based construction activities such as; painting, rubber base, carpet, epoxy flooring etc. shall be limited to Fridays from 4pm to Saturday at 12 midnight. (This allows for a 36-hour time period for off-gassing.)

.2 Hours of operations for occupied areas requiring access through the occupied areas may only occur from 4pm to 7am Monday to Friday and 4pm Friday to 7am Monday with the following exception, odor-based construction activities such as; painting, rubber base, carpet, epoxy flooring etc. shall be limited to Fridays from 4pm to Saturday at 12 midnight. (This allows for a 36-hour time period for off-gassing.)

.3 Work during school hours must be approved by the appropriate Board Authority and the School Principal / designate. All construction and maintenance activities shall be confined to the areas of the school under construction. Fire exits shall be maintained at all times and physical barriers will be used to isolate the construction work from school staff and students.

.4 The contractor must co-operate and co-ordinate all construction activities, which may interfere with the school, with the school Principal / designate. All noise related construction activities that would affect the staff and students' abilities to properly concentrate on school related activities is to be limited to 4pm to 8am daily.

.5 It is the responsibility of the Contractor to clearly demark the work site borders and areas not to be used by usual occupants of the building or grounds. The Contractor must at all times erect and maintain adequate fencing or barriers around all excavations, pits, and in other places of danger.

.6 The Contractor must be responsible for all sub-trades, including payment of the same, necessary to produce a complete installation.

.7 Power and water may be available from the site where approved, but these facilities shall not be altered for the Contractor's use.

.8 The Contractor shall obtain approval from the Capital Projects Officer for location of temporary buildings, temporary office, storage sheds and workshops as required by the work throughout the period of construction. The contractor must remove temporary buildings upon completion of the work and restore the property to the condition as found on commencement of the work.

.9 The Contractor and their employee(s) must be aware of the location of the school's Health & Safety Board containing the following information: Designated Substance Reports, MSDS Sheets and general Health & Safety information. The contractor must provide a First Aid Kit and the name of the Safety Representative and stretcher for use by contractor employees.

.10 The Contractor must not use school property as an office, for the purpose of hiring staff or conducting business or personal affairs on any project.

2. COMMUNICATION

.1 The Site Supervisor and Principal / designate shall have communication meetings at the start of each day for the purpose to review the construction activities planned for that day.

.2 The Board's Capital Projects Officer will follow-up with the Principal / designate regularly to review the communication between the Site Supervisor and the Principal / designate and to review construction activities.

.3 The Principal / designate will communicate work activities to the school staff and students as required.

.4 The Principal / designate is the single point of contact for reporting of Health and Safety incidences from staff. Upon receipt of notification of an incidence the Principal / designate shall perform an investigation with the School Health & Safety Representative. Following the investigation, the Principal / designate and the School Health and Safety Representative will decide either to evacuate or relocate staff and students from the area of concern. Following this, the Principal / designate will report the findings to the contractor's site supervisor and the Board's Capital Projects Officer. If the belief is that, there is an immediate danger to the Health and Safety of staff and students the Principal / designate may direct the contractor's site supervisor to terminate construction activities until such time that all parties believe the workplace is safe. The reporting structure to the Board is as follows, the Principal / designate shall report directly to the Board's Capital Projects Officer who will in turn report the incidence to the Board's Health and Safety Officer. If the Board's Capital Projects Officer is not reachable the Principal /designate is to contact the Assistant to the Controller of Planning & Facilities at extension 351. From this point the Board's Capital Projects Officer or the Assistant Manager of Facilities Services will be notified of the incidence.

3. SCHOOL USE OF FACILITIES

.1 The school regular hours of operations are from 7am to 4pm Monday to Friday.

.2 The school is encouraged to hold off any after-hours use of facilities adjacent to the area of work until completion of the construction contract. That said it is understood that the school needs to continue to provide activities beyond the regular school day and thus after-hours school use of facilities in the building will be permitted from Monday to Thursday. The school must be aware and accept that after-hours use may be interrupted by construction activities.

.3 The Principal / designate will communicate after hours use of facilities activities to the Contractor's site supervisor at the communication meetings described in 2.1 of 2. COMMUNICATION. It is anticipated that the Contractor will co-operate with the school to make the facilities available and safe for the use of extra-curricular activities such as sports tournaments, school dances, school productions etc.

.4 Staff are encouraged to work from home for after-hours work until completion of the construction contract.

.5 External Groups are not permitted to use the facilities after hours until completion of the construction contract.

4. OPERATION OF VEHICLES ON BOARD PROPERTY

.1 Prior written approval must be obtained from the School Principal / designate when bringing vehicles on to school property during schools hours. Trucks and all other vehicles shall proceed with caution with a maximum 10 km/h on school property. All trucks must be equipped with automatic back-up alarms. If a back-up alarm is not available than a Flag person must be provided.

.2 Trades persons vehicles must be parked in designated parking areas with signage to indicate “Contractor Parking Only”. All trades personnel are to back their vehicles into the spaces.

5. TOOLS AND EQUIPMENT

.1 The Contractor’s equipment/tools must be in safe working condition, including required guards on tools and equipment and grounding devices. Operating manuals and maintenance records shall be available on request for all powered equipment.

6. MATERIAL STORAGE

.1 Contractor material and equipment must be stored in a safe manner in designated materials storage areas. These areas shall be protected at minimum with snow fencing sufficiently secured by metal posts.

.2 Oxygen and acetylene cylinders must be chained in the vertical position or be secured on a welding cart designed for this purpose. If not on a cart, the cylinder regulator must be removed and the cylinder cap on. Full and empty tanks are to be stored in separate fenced areas and signage provided to indicate their presence.

.3 Propane tanks that are not in use must not to be stored in school buildings. Propane cylinders shall not be changed indoors. Workers using propane must have Technical Standards Safety Authority (T.S.S.A.) Certification and provide proof to the Board upon request.

.4 Open cans of varsol, thinners and other volatile products are not permitted in the building. For storage and dispensing restrictions, refer to Item 8. “FLAMMABLE LIQUIDS “.

.5 Paint cans must be sealed when not in use and stored in construction areas.

7. NATURAL GAS PIPING

.1 All work related to natural gas systems must be completed by a licensed gas fitter. This work may not occur while the building is occupied.

8 FLAMMABLE LIQUIDS

.1 Flammable liquids must be stored in appropriate ULC approved metal safety containers with a flame arrestor and spring-loaded cap. The contractor is responsible for the provision of proper storage containers and/or steel cabinet designed for that purpose. One day's supply of flammable liquid may be used without a steel flammable storage cabinet. However, dispensing containers for flammable liquids must be as described above and containers and dispensing

equipment must be bonded and grounded. Dispensing must be done using mechanical ventilation or be done outdoors. Equipment and dispensing methods must confirm to CSA B376-M1980 and Ontario Regulation 213/851.

9 CONTROLLED PRODUCTS (WHMIS)

.1 All controlled products must be WHMIS labeled before being brought onto Board property. Material Safety Data Sheets for all controlled products must be available on site. The contractors are responsible for training their employees in the safe use and handling of all controlled products and proof of training must be provided as part of the Pre-Qualification.

10 SAFETY EQUIPMENT

.1 The contractors are responsible to ensure that all employees wear safety equipment, as required, to work in a safe manner. Contractors must ensure that their employees are trained in the use of this equipment.

11 FIRE SAFETY

1 The contractor is responsible for providing fire extinguishers in the repair / renovation / construction areas and for ensuring that employees are trained in the use of extinguishers.

.2 The following persons contact numbers shall be added to the school's Fire Plan – Emergency Contacts list; the Board's Capital Projects Officer, the contractor's Site Supervisor and the contractor's emergency line.

12 CIGARETTES, ALCOHOL AND ILLEGAL DRUGS

.1 Smoking is not permitted on Board property. Consuming alcohol or illegal drugs on Board property is strictly prohibited. Persons appearing to be under the influence of alcohol or illegal drugs will be asked to leave the work site. The contractor must ensure that employees asked to leave are provided transportation home.

13 HOUSEKEEPING

.1 Contractors must keep work site areas clean and tidy. Nails in lumber must be removed. Materials must be laid down and piled safely and garbage must be placed in proper waste containers.

.2 The contractor must survey the site at the end of each day and remove any garbage that has not been removed as described in 13.1.

14 LADDERS, SCAFFOLDS, SWING STAGES, VERTICAL MAN-LIFTS

.1 The contractors are responsible for training their employees in inspecting, erecting, and using scaffolds, ladders, swing stages and vertical man-lifts. Ladders must extend 3 feet beyond the upper support. Ladders must be held by a worker on the ground or tied off if over 10 feet high. Formal training must be given to workers on the proper use of scaffolds, swing stages and vertical man-lifts if used on the job. Equipment operating manuals and the required Professional Engineering documents must be available on site and produced upon request.

15 ASBESTOS & OTHER DESIGNATED SUBSTANCES

.1 Prior to commencement of any work affecting the structure of the building, the Contractor shall review the Designated Substance Survey and asbestos report (if available) for the building. The Contractor shall evaluate the potential presence of

asbestos in the specific work zone. If asbestos is present, the Board's Capital Projects Officer shall be notified immediately, and no work is to proceed until any materials containing asbestos have been dealt with in accordance with the Occupational Health and Safety Act and the Board's Asbestos Management Program.

16 PERMITS AND REGULATIONS

.1 The Contractor shall obtain any required permits and conform to any existing applicable codes, such as the Canadian Standards Association, Underwriter's Laboratories of Canada, Ontario Fire Code, Ontario Building Code, Ontario Electrical Code, Ministry of Labour, and all local Bylaws and any other applicable regulatory requirements.

.2 The Contractor shall record all electrical work performed on a daily basis.

17 INJURIES

.1 Each Contractor or sub-contractor is responsible for responding to, providing treatment and transporting to medical services their injured employees. Response must include first aid to the injured person, hospital aid, securing the site and notification as required under the Occupational Health and Safety Act. Emergency Response Plans should be in place for all emergencies and pull stations used to clear the building if required. Someone on site must be certified in Standard Care First Aid. The School Principal / designate or the Board's Capital Projects Officer shall be notified of any emergency or worker injury.

18 SUPERVISION AND RESPONSIBILITY

.1 The Contractor shall supervise and direct the work of all persons engaged in the work, including sub-contractors and those who supply materials and the contractor will be fully responsible for full compliance with the terms of the contract by all such persons. All construction shall be performed as specified and in a manner conforming to the best trade practices.

19 DEFECTIVE MATERIAL AND WORKMANSHIP

.1 The Contractor shall promptly remove from the building all used materials and materials condemned by the Board, as failing to conform to the contract, whether incorporated in the work or not.

20 CUTTING, PATCHING, DIGGING AND FITTING

.1 The Contractor shall do all cutting, fitting or patching of his 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. Any costs or expenses caused by poorly coordinated or ill-timed work shall be borne by the party responsible therefore.

.2 The Contractor shall not endanger any existing work or building by cutting, digging or otherwise.

.3 Any work requiring the use of welders, torches etc. requires a Hot Work Permit issued by the Board's Plant Services Dept. This permit shall be coordinated through the Board's Capital Projects Officer.

21 VENTILATION

.1 Contractor to ensure that HVAC systems are run in occupied mode 24hrs per day 7 days a week until completion of the construction contract. Contractor to make all necessary arrangements for running of the HVAC systems through the Board's Capital Projects Officer.

.2 Filter changes to the HVAC systems must be increased in frequency to bi-weekly changes until the work of the contract is complete.

.3 The Board will provide the filter changes in 21.2 to occupied areas of the school. The contractor is responsible for the filter changes in 21.2 in all unoccupied areas.

22 DUST CONTROL

.1 The contractor shall provide appropriate polyethylene plastic curtains between new construction and corridors to prevent dust penetration and provide doormats and take other appropriate precautions in these rooms to prevent dirt being tracked into the school. These areas must be sealed tight with tape or other suitable material to provide a dust and vapor tight enclosure.

.2 Fresh air returns from construction areas shall be sealed tight or temporary filter system provided while dust-causing work is being performed.

.3 The contractor shall provide suitable dust control for all exterior construction activities.

.4 Dust control measures must be used when sweeping of floors in construction areas.

23 SIGNAGE

.1 Signage shall be provided by the contractor on the occupied side of every door and entry into construction areas. Signage shall indicate "Construction Zone – Authorized Personnel Access Only" or similar wording.

.2 Construction signage shall also be provided by the contractor for any exterior site work activities. The signage shall indicate "Construction Zone – Authorized Personnel Access Only" or similar wording.

.3 In addition to items 23.1 and 23.2, the contractor shall also provide for and maintain all required construction signage by the Ministry of Labour.

24 BUSSING AND TRANSPORTATION ROUTES

.1 No construction activity may occur during student drop-off and pick-up times. The Site supervisor shall obtain the bussing schedule from the school Principal / designate.

.2 All fire and emergency access routes shall be maintained free and clear of any obstructions 24hrs per day 7 days a week. These access routes shall also be maintained and accessible to allow for snow removal by Board retained snow removal contractors.

.3 The school is responsible for ensuring that the routes (described in 24.2) are clear is limited to ensuring that they are kept clear of staff, student, visitor and school

delivery vehicles.

.4 The Board shall arrange for normal snow clearing of the parking areas and the fire and emergency access routes. The Contractor is responsible for controlling dust mud build- up of these routes.

25 SECURITY

.1 The school must be left in a safe and secure condition at the end of every day. The Contractor is responsible for arming the building at the end of each day if school staff are not present.

.2 The Contractor shall be solely responsible for loss or damage of his/her tools, equipment or any materials on Board property.

.3 The Contractor shall ensure the work zone is clearly delineated with appropriate barricades to prevent unauthorized access.

.4 The Contractor shall key all door cylinders in door entries to construction areas with a construction key different than that of any keying dedicated to the building. One key shall be provided to the following Board personnel; Principal / designate, Vice-Principal / designate, Board's Capital Projects Officer and the Custodian-in-Charge. Duplication of the construction keys is not permitted by Board personnel unless consent is provided jointly by the contractor and Board's Capital Projects Officer.

.5 All doors and entries into construction zones shall remain locked at all times to prevent unauthorized entry into these spaces.

.6 The Principal / designate, Vice-Principal / designate and Custodian in Charge shall access construction areas for emergency purposes only. The Board's Capital Projects Officer is entitled access to these areas to perform site review and inspection activities.

.7 Access to all construction areas shall be made directly from the exterior only unless it is agreed to with the Principal / designate / designate and/or the Board's Capital Projects Officer that access is required through the occupied spaces.

26 WASHROOMS/TOILETS

.1 The Contractor shall provide and maintain in a sanitary condition, washrooms and toilets for the use of all persons at the work site, and upon completion of the work, remove it and contents, and leave its site in a neat, clean and sanitary condition. Workers shall use designated washrooms as designated by their employer.

.2 School washrooms/toilets are not to be used by any trades persons.

27 SAFE EXCAVATION/DRILLING PRACTICES

.1 Prior to work commencing the Contractor shall adhere to the following the procedures;

.1.1 Obtain ground locates of the following utilities, but not limited to, water, electrical, gas, Bell, fiber optics, ground source heating lines. Locates are to be physically identified on the ground with paint or flags and the Contractor shall obtain a certificate by the Locate Contractor with a sketch

map identifying these locates. A copy of such is to be provided to the School Board and it is obligatory that the School Board's Capital Projects Officer review the site to confirm the presence of the paint identification markings, flags etc. prior to the work commencing.

.1.2 The Locate/certificate shall not go beyond the expiry date. In the event that the certificate expires the contractor shall obtain new locates and follow the procedures described in 27.1.1

.1.3 The contractor shall provide minimum 48hrs notice of the work activities to the School Board's Capital Projects Officer and the contractor shall provide a schedule of the work.

.2 The Contractor shall be knowledgeable of all Safe Digging regulations for each Utility Company.

END OF SECTION

Abbreviations listed, when used in the Contract Documents, shall have the following meanings:

ABBREVIATION	MEANING
AA	ALUMINUM ASSOCIATION
AAMA	ARCHITECTURAL ALUMINUM MANUFACTURERS` ASSOCIATION
AASHO	AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS
ACI	AMERICAN CONCRETE INSTITUTE
AGA	AMERICAN GAS ASSOCIATION
AIA	AMERICAN INSTITUTE OF ARCHITECTS
AIMA	ACOUSTICAL & INSULATING MATERIALS ASSOCIATION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AMCA	AIR MOVING AND CONDITIONING ASSOCIATION INC.
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING & AIR CONDITIONING ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWI	ARCHITECTURAL WOODWORK INSTITUTE (USA)
AWMAC	ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA
AWS	AMERICAN WELDING SOCIETY
CCA	CANADIAN CONSTRUCTION ASSOCIATION
CCRC	CANADIAN CODE FOR RESIDENTIAL CONSTRUCTION
CEC	CANADIAN ELECTRICAL CODE
CFUA	CANADIAN FIRE UNDERWRITERS ASSOCIATION
CGA	CANADIAN GAS ASSOCIATION
CGSB	CANADIAN GENERAL STANDARDS BOARD
CIQS	CANADIAN INSTITUTE OF QUANTITY SURVEYORS
CISC	CANADIAN INSTITUTE OF STEEL CONSTRUCTION
CITC	CANADIAN INSTITUTE OF TIMBER CONSTRUCTION
CLA	CANADIAN LUMBERMEN`S ASSOCIATION
CMHC	CANADA MORTGAGE & HOUSING CORPORATION
COFI	COUNCIL OF FOREST INDUSTRIES OF BRITISH COLUMBIA
CPCI	CANADIAN PRESTRESSED CONCRETE INSTITUTE
CRCA	CANADIAN ROOFING CONTRACTORS ASSOCIATION
CSA	CANADIAN STANDARDS ASSOCIATION
CSC	CONSTRUCTION SPECIFICATIONS CANADA
CSI	CONSTRUCTION SPECIFICATIONS INSTITUTE (USA)
CSPI	CORRUGATED STEEL PIPE INSTITUTE
CSSBI	CANADIAN SHEET STEEL BUILDING INSTITUTE
CUA	CANADIAN UNDERWRITERS` ASSOCIATION
CWB	CANADIAN WELDING BUREAU
CWC	CANADIAN WOOD COUNCIL
DND	DEPARTMENT OF NATIONAL DEFENCE, CANADA
FM	FACTORY MUTUAL ENGINEERING CORPORATION
FS	FEDERAL SPECIFICATION (USA)
IES	ILLUMINATING ENGINEERING SOCIETY
IGMAC	INSULATED GLASS MANUFACTURERS ASSOCIATION OF CANADA
LTIC	LAMINATED TIMBER INSTITUTE OF CANADA
MIA	MARBLE INSTITUTE OF AMERICA
MPMDD	MODIFIED PROCTOR MAXIMUM DRY DENSITY
NAAMM	NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (USA)
NBFU	NATIONAL BOARD OF FIRE UNDERWRITERS

NBC	NATIONAL BUILDING CODE OF CANADA
NBS	NATIONAL BUREAU OF STANDARDS (USDC)
NEMA	NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NHLA	NATIONAL HARDWOOD LUMBER ASSOCIATION (USA)
NLGA	NATIONAL LUMBER GRADES AUTHORITY
NRC	NATIONAL RESEARCH COUNCIL
OBC	ONTARIO BUILDING CODE
OHSA	OCCUPATIONAL HEALTH AND SAFETY ACT
OPSS	ONTARIO PROVINCIAL STANDARD SPECIFICATIONS
PCA	PORTLAND CEMENT ASSOCIATION
PCI	PRESTRESSED CONCRETE INSTITUTE
SDI	STEEL DECK INSTITUTE
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
SSPC	STEEL STRUCTURES PAINTING COUNCIL
TTMAC	TERRAZZO, TILE & MARBLE ASSOCIATION OF CANADA
ULC	UNDERWRITERS LABORATORIES CANADA
UL	UNDERWRITERS LABORATORIES (USA)
USAS	UNITED STATES OF AMERICA STANDARDS INSTITUTE
WSIB	WORKPLACE SAFETY AND INSURANCE BOARD

END OF SECTION

1 REFERENCES

.1 Occupational Health and Safety Act and Regulations for Construction Projects (2000) (Ontario Regulation 213/91, amended by Reg. 631/94, & Reg. 145/00).

.2 National Building Code of Canada (2025)

.3 National Fire Code of Canada (2020)

.4 Ontario Fire Code (2026)

.5 Ontario Building Code (2024)

2 INSTALLATION AND REMOVAL

.1 Provide temporary utilities, facilities and controls in order to execute the work expeditiously. Remove from site all such work after use.

3 VEHICULAR ACCESS & PARKING

.1 Provide and maintain adequate access to project site.

.2 Build and maintain temporary access roads where indicated or required, and provide snow removal during period of work.

.3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads. Maintenance shall include regular snow removal if not provided under separate contract, and regular power washing to remove mud and dirt.

.4 Where site access for construction vehicles necessitates use of public roads, remove mud and dirt from such roads where contaminated by construction vehicles.

.5 Traffic Control: Provide and maintain flag persons, traffic signals, barricades and flares, lights, or lanterns as required to perform the work and protect the public.

.6 Construction Parking

.1 Parking for construction equipment vehicles will be limited to the site or immediate areas of work.

.2 Parking for Contractors' and Sub-contactors' personal vehicles will be limited to Construction Site provided it does not constitute a safety hazard nor disrupt the performance of Work.

4 TEMPORARY UTILITIES

.1 Temporary Electricity and Lighting

.1 Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.

.2 Install temporary facilities for power such as pole line and underground cables to approval of local power supply authority.

.3 Electrical power and lighting systems installed under this contract can be used for construction requirements provided that guarantees are not affected thereby. Make good damage. Replace lamps which have been used more than a period of 3 months.

.4 Provide temporary lighting in all areas of construction, to the minimum requirements of the Occupational Health and Safety Act, and minimum requirements specified herein.

.2 Temporary Water Supply

.1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.

.2 Permanent water supply system installed under this contract can be used for construction requirements provided that guarantees are not affected thereby. Make good damage.

.3 Temporary Heating and Ventilating

.1 Provide and maintain all temporary heat and ventilation necessary during construction, including cost of installation, fuel, operation, attendance and maintenance. Use of direct-fired heaters discharging waste products into work areas will not be permitted unless prior approval is given by Owner.

.2 Provide 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 temperatures and humidity levels for storage, installation and curing of materials.
.5 Provide adequate ventilation to meet health regulations for safe working environment.

.3 Maintain minimum temperature of 10°C or higher where construction is in progress and maintain until acceptance of structure by Owner.

.4 Ventilating

.1 Prevent hazardous accumulation of dust, fumes, mists, vapours or gases in areas occupied during construction.
.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
.3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
.4 Ventilate storage spaces containing hazardous or volatile materials.
.5 Ventilate temporary sanitary facilities.
.6 Continue operation of ventilation and exhaust system for a time after cessation of work process, to assure removal of harmful elements.

.5 Maintain strict supervision or operation of temporary heating and ventilating equipment.

.1 Conform with applicable codes and standards.
.2 Enforce safe practices.
.3 Prevent abuse of services.

.4 Prevent damage to finishes.
.5 Vent direct-fired combustion units to outside.

.6 The permanent HVAC systems of the building, or portions thereof, may not be used during construction.

5 CONSTRUCTION FACILITIES

.1 Field Office

.1 Provide minimum 3000mm x 10,000mm field office and furnish with desk, drawing layout table, filing cabinet, and coat hooks.

.2 Provide minimum 750 Lx lighting level.

.3 Heat and cool to maintain 22°C inside temperature.

.4 Provide 2 operable windows for cross ventilation, or air condition.

.5 Provide meeting table and seating for minimum 12 persons.

.2 Temporary Communication

.1 Provide and pay for temporary communication systems to be installed in Field Office.

.2 Provide hard wire and wireless internet access.

.3 Cellular telephones are acceptable.

.3 Equipment, Tools and Materials Storage

.1 Provide adequate weather tight enclosures with raised floors, for storage of materials, tools, and equipment, which are subject to damage by weather.

.2 Temporary enclosures required by sub-trades as workshops shall be provided by those trades.

.4 Site Storage and Overloading

.1 Confine the Work and the operations of employees to limits indicated by the Contract Documents. Do not unreasonably encumber the premises with products.

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

.5 Sanitary Facilities

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances. Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition. Where portable toilet facilities are provided, empty and sanitize such facilities on a weekly basis, or more frequently if required.

.2 Permanent new facilities shall not be used by the Contractor.

6 CONSTRUCTION SAFETY MEASURES

.1 The Contractor agrees that the Board is not to be understood as the employer to any Contractor nor to such Contractor's personnel or staff for any work, services, or supply of any products or materials that may be awarded as a result of this Call for Bid document. The Contractor herewith agrees to be the "Constructor" as defined in the Occupational Health and Safety Act.

.2 Observe all construction safety measures as required by the General Conditions of the Contract, Act and Regulations for Construction Projects (2000) (Ontario Regulation 213/91, amended by Reg. 631/94, & Reg. 145/00) and by all authorities having jurisdiction, provided that in case of conflict or discrepancy, the more stringent requirements shall apply.

.3 Provide applicable spare safety equipment such as helmets, safety glasses, and harnesses, and enforce their use by Consultants, the Owner, their representatives and any authorized visitors to the site.

.4 Provide and maintain fences, gates and locks, covered walkways, guard rails, barriers, night lights, and appropriate warning signage as required for the protection of the public, and of public and private property; as required by the General Conditions of the Contract, the Occupational Health and Safety Act and Regulations for Construction Projects, and by all authorities having jurisdiction. Erect and maintain sturdy railings around shafts, and the like, to protect workers and the public from injury.

.5 Workplace Hazardous Materials Information System

.1 Comply with all requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets.

.2 Include copies of all WHMIS data sheets in Operations and Maintenance Manuals.

7 CONSTRUCTION AIDS

.1 Falsework

.1 Design and construct falsework in accordance with CSA S269.1.

.2 Scaffolding

.1 Design, construct and maintain scaffolding in accordance with CSA S269.2.

.2 Erect scaffolding independent of walls. Remove promptly when no longer required.

.3 Hoisting

.1 Provide, operate and maintain hoists or cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.

.2 Hoists or cranes shall be operated by qualified operator.

8 TEMPORARY BARRIERS & ENCLOSURES

.1 Construction Isolation Fencing

.1 Erect isolation fencing around perimeter of construction areas to protect the public, workers, and the public from injury.

.2 Construction Isolation Fencing shall consist of:

.1 Temporary modular welded wire mesh fencing, minimum 1828 x 2440mm high, by CanFence Rentals Ltd., or equivalent.

.2 Provide lockable gates within hoarding / fencing for access to site by workers and vehicles.

.3 Provide barriers around trees and planting beds designated to remain. Protect from damage.

.4 Enclosure of Structure

.1 Provide temporary weather tight enclosures and protection for exterior openings until permanently enclosed.

.2 Erect enclosures to allow access for installation of materials and working inside enclosure.

.3 Erect enclosures to withstand wind pressure and snow loading.

.4 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.

.5 Dust Control

.1 Provide dust tight screens or partitions to localize dust generating activities, and for the protection of workers, or finished areas of Work.

.2 Dust screens shall consist of, as a minimum, 0.15mm thick fire retardant polyethylene sheets secured to appropriate framing and sealed at all joints and at perimeter to prevent migration of dust

.1 Poly sheet: Polytarp, Super Six by Polytarp Products or approved alternative.

.3 Maintain and relocate protection until such work is complete.

.4 Provide dust-catching walk-off matting, at all construction entrances.

.6 Security Measures

.1 Where progress of construction reaches point where building exterior is fully enclosed, provide construction cylinders for doors, and secure building against intrusion. Where installation of fixtures and equipment, or storage of materials and equipment, inside the building has begun prior to installation of exterior windows and doors, provide temporary plywood enclosures for window and door openings to prevent intrusion until permanent closures are in place.

.2 Extent of security services shall be at the sole discretion of the Contractor (except as noted in item .3 below) and all costs incurred shall be paid for by

the Contractor. Note that the fit, finish and new appearance of the finished building will not be compromised to accommodate temporary security provisions. Materials, products, finishes, etc. damaged due to vandalism are to be restored and/or replaced to an as-new condition.

.3 Commencing at a date which is four (4) months prior to the scheduled date for Substantial Performance, Contractor shall arrange and pay for the provision of “after hours” manned security at the project site. Security shall provide surveillance and oversite of the building and site areas, during all times when the Contractor’s construction personnel are not in attendance. Continue services until time of substantial completion.

.7 Site Signs and Notices

.1 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by Owner.

.2 No other signs or advertisements of any description except notices regarding safety and instruction, shall be put up around the building, or site, without the approval of the Owner.

END OF SECTION

1 REFERENCES

.1 National Building Code of Canada (2025)

.2 National Fire Code of Canada (2020)

.3 Ontario Fire Code (2026)

.4 Guidelines for Maintaining Fire Safety during Construction in Existing Buildings, (10/31/88) Ontario Ministry of the Solicitor General, Office of the Fire Marshal.

.5 Ontario Building Code (Regulation 350/06)

2 FIRE SAFETY

.1 Fire Fighting Equipment

.1 Provide and maintain in working order, ULC labelled, 9kg 4A 60BC type fire extinguishers, and locate in prominent positions to approval of authorities having jurisdiction.

.2 Fire Department Access

.1 Provide and maintain fire access routes as designed, as soon as construction sequence will allow. Access routes must have compacted granular subbase, and base in place before superstructure of building may proceed.

.2 Construction activities must not obstruct access routes designated for fire department equipment. If necessary that existing access be obstructed or deleted, alternative access, acceptable to the fire department, must be provided prior to commencement of construction, in accordance with Ontario Building Code location and design criteria for required access routes.

.3 Control of Combustible Materials

.1 The stockpiling of construction materials adjacent to the existing building must be carefully controlled in accordance with the Ontario Fire Code. Materials stored, and their proximity to, equipment used in construction may create a fire hazard. Control of combustibles on a construction site is regulated under the Occupational Health and Safety Act.

.4 Hot Work

.1 Conform to the requirements of the Occupational Health and Safety Act – Regulations for Construction Projects.

.2 Provide all necessary guards and barriers to protect workers, property, and the public when performing hot work such as torching, cutting or coring. Protect all adjacent combustible materials.

.3 Provide a "Fire Watch" for a minimum of 3 hours after each instance of discontinuing hot work.

END OF SECTION

1 DEFINITIONS

.1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.

.2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

2 SUBMITTALS

.1 Submittals: in accordance with Submittal Procedures.

.2 Prior to commencing construction activities or delivery of materials to Site, submit Environmental Protection Plan for review and approval by Owner Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.

.3 Address topics at level of detail commensurate with environmental issue and required construction tasks.

.4 Environmental protection plan: include:

.1 Name(s) of person(s) responsible for ensuring adherence to Environmental Protection Plan;

.2 Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from Site;

.3 Name(s) and qualifications of person(s) responsible for training site personnel;

.4 Descriptions of environmental protection personnel training program;

.5 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial and Municipal laws and regulations;

.6 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on Site;

.7 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff;

.8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas;

.9 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance;

.10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris;

.11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off-site;

.12 Contaminant prevention plan that: identifies potentially hazardous substances to be used on Site; identifies intended actions to prevent introduction of such materials into air, water or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials;

.13 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water and water used in flushing of lines;

.14 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands;

.15 Pesticide treatment plan: to be included and updated, as required.

3 FIRES

.1 Fires and burning of rubbish on Site is strictly prohibited.

4 DISPOSAL OF WASTES

.1 Burying of rubbish and waste materials on Site is strictly prohibited.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

5 DRAINAGE & EROSION CONTROL

.1 Provide erosion and sediment control plan that identifies type and location of erosion and sediment controls to be provided. Plan: include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

.2 Storm Water Pollution Prevention Plan (SWPPP) may be substituted for erosion and sedimentations control plan.

.3 Provide temporary drainage and pumping as necessary to keep excavations and Site, free from water.

.4 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

.6 Provide and maintain temporary drainage and pumping as necessary to keep excavations and site free from excess water.

.7 Provide silt fencing at site perimeters and where required by local authorities to prevent contamination of adjoining properties from silt and water drainage.

6 TREE AND PLANT PROTECTION

.1 Protect existing trees and plants on all adjacent properties, where in close proximity to construction activities, or where construction access passes within 3m of trees or plants, whether indicated on drawings or not.

.2 Conform to all local By-Laws regarding tree preservation and protection.

.3 Protect existing trees and plants on site as indicated.

.4 Restrict tree removal to those designated by Owner. Wrap in burlap trees and shrubs adjacent to construction work, storage areas and trucking lanes. Encase trees and shrubs with protective wood framework from grade level to height of 2134mm.

.5 Protect roots to minimum 1m beyond dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones of protected trees. Minimize stripping of topsoil and vegetation.

.6 The Minimum Tree Protection Zone will be the drip line. Within this tree protection zone there will also be no construction activity including but not limited to no root cutting, no alteration or disturbance to existing grades of any kind, no changes to the grade by adding fill, excavating or scraping, no storage of construction materials or equipment, no stockpiling of soil, debris or construction waste, & no movement or storage of heavy vehicles or equipment. Tree protection barriers must be included and priced as part of the project. For short term project (up to 2 months), standard T-bars and plastic safety fence can be used. For a longer term project, use 10 gauge chain link fence and standard T-bars. In all cases, standard T-bars should not be spaced more than 6 to 7 feet apart. These protection barriers must be erected before the project starts, must be maintained throughout the project, and taken down when final inspection and signoffs are completed.

7 WORK ADJACENT TO WATERWAYS/DRAINAGE DITCHES

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in waterways.

.4 Design and construct temporary crossings to minimize erosion to waterways.

.5 Do not skid construction materials across waterways.

.6 Avoid indicated spawning beds constructing temporary crossings of waterways.

8 POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this Contract.

.2 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.

.3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

9 HISTORICAL / ARCHAEOLOGICAL ARTIFACTS

.1 In the event that buried archaeological remains are encountered on the property during construction activities, the Heritage Operations Unit of the Ministry of Tourism and Culture be notified immediately.

.2 In the event that human remains are encountered during construction, the proponent should immediately contact both the Ministry of Tourism and Culture, and the Registrar or Deputy Registrar of Cemeteries at the Cemeteries Regulation Unit, Ministry of Government Services, (416) 326-8404.

10 NOTIFICATION

.1 Owner will notify Contractor in writing of observed non-compliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan. Contractor shall, after receipt of such notice, inform Owner of proposed corrective action and take such action for approval by Owner.

.2 Owner will issue stop order of Work until satisfactory corrective action has been taken.

.3 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

1 PRODUCT OPTIONS

.1 Provide products specified under individual specification sections. Where Specification lists two or more products, or two or more manufacturers of the same product, the Contractor may select one of the listed products or manufacturers. Confirm selection of products and manufacturers when requested by the Owner.

.2 When only one product or manufacturer is listed in the specifications, it is intended that only that product or manufacturer is acceptable.

2 PRODUCT SUBSTITUTION PROCEDURES

.1 Substitution Procedures During Construction

.1 Products may only be substituted during the Construction period for one or more of the following reasons:

.1 Insolvency of the product manufacturer.

.2 Inability of the manufacturer to provide the product(s) in the timeframe required to maintain the construction schedule.

.3 Product specified has been discontinued.

.4 Substitution proposed offers better performance than that specified, at no additional cost.

.5 Substitution offers equivalent performance to that specified, at a reduced cost to the Owner (reduction in Contract Price).

.2 Items 2.1.1.2, and 2.1.1.3 will require a letter from the manufacturer, confirming their inability to provide the products specified, or inability to meet the schedule.

.3 Items 2.1.1.4, and 2.1.1.5 will be at the discretion of the Owner.

3 AVAILABILITY

.1 Immediately upon signing Contract, review Product delivery requirements, and identify lead times for supply of all Products. If lead times in supply of Products may affect the Construction Schedule, notify the Owner in order that appropriate action may be authorized in ample time to prevent delay in performance of the Work.

.2 The Contractor shall order Products and materials in a timely fashion so as to ensure that delivery of such Products and materials shall coincide with the Construction Schedule. Failure of the Contractor or their Subcontractors to order Products and materials in a timely fashion, shall not be cause for substitution in accordance with the criteria set out under Article 2 – Product Substitution Procedures.

.3 In the event of failure to notify the Owner of Product delivery problems at the commencement of the Work, and should it appear that the Work may be delayed for such reason, the Owner reserves the right to substitute more readily available Products of similar character of their choosing, at no increase in Contract Price.

4 REFERENCE STANDARDS

.1 Within the specifications, reference standards are identified. Conform to these standards, in whole or part, as specifically requested.

.2 If there is question as to whether any product or system is in conformance with applicable standards, the Owner reserves the right to have such products or systems tested to prove or disprove conformance.

.3 The cost for such testing will be borne by the Contractor in the event of non-conformance.

.4 Conform to latest date of issue of referenced standards in effect on date of submission of bids, except where a specific date of issue is specifically noted.

5 PRODUCT TRANSPORTATION & DELIVERY

.1 Transportation and delivery costs of Products required in the performance of the Work, are included in the Contract Price.

.2 Transportation and delivery costs of Products supplied by the Owner will be paid for by the Owner. Unload, handle, and store such Products on site.

.3 Products must be appropriately crated, skidded, boxed, shrink-wrapped, or otherwise packaged to protect such products from damage during shipment. Products which arrive at the site in a damaged condition must be rejected and returned to the supplier/manufacturer for immediate replacement.

.4 Advise the Owner 30 days in advance of anticipated delivery dates for materials and equipment supplied by the Owner.

6 PRODUCT STORAGE, HANDLING AND PROTECTION

.1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions.

.2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in the Work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementitious products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store paints in a heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged Products at own expense and to the satisfaction of the Owner.

7 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's printed instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

.2 Notify Owner in writing, of conflicts between the specifications and manufacturer's instructions, so that Owner may establish correct course of action.

.3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes the Owner to require removal, replacement where necessary, and re-installation at no increase in Contract Price.

8 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in the affected specification Section.

.4 Space anchors within limits of load limit or shear capacity and ensure that they provide positive permanent anchorage. Wood or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

.7 Obtain Owner's approval before using explosive actuated fastening devices.

9 QUALITY OF MATERIALS

.1 Products, materials, equipment and articles (referred to as Products throughout the specifications) incorporated in the Work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.

.2 Products relying on uniformity of colour and pattern for appearance, such as resilient flooring, carpeting, fabrics, and vinyl wallcovering, shall be from one dye lot for the project. All products delivered to the site must be labeled as to dye lot, or production run number, as well as production date.

.3 Defective products, whenever identified prior to the completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.

.4 Should any dispute arise as to the quality or fitness of Products, the Owner may request additional testing based upon the requirements of the Contract Documents, to confirm acceptability of products or materials. Refer to Article 10 - Defective Materials and Work, and Section 01 40 00.

.5 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item throughout the building.

.6 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

10 DEFECTIVE MATERIALS AND WORK

.1 Where evidence exists that defective work has occurred, or that work has been carried out incorporating defective products, the Owner may have independent tests, inspections, or surveys performed in order to determine if work is defective.

.2 Tests, inspections, or surveys carried out under these circumstances will be made at the Contractor's expense in the event of defective work, or at the Owner's expense where work is in conformance. Where tests incorporate a number of samples, payment will be assessed, by the Owner, based on the ratio of conforming to non-conforming results. This does not include re-testing of soil compaction during placement, where evidence exists of non-conformance with the Contract documents, but rather only if re-testing is called for after completion of compaction.

12 WARRANTIES & GUARANTEES

.1 Guarantee and warrant all products and labour forming part of the Work for minimum one year unless extended warranties are otherwise specified herein.

.2 Guarantee and warrant products and assemblies for the specified periods of time where in excess of the Contract Warranty, as specified within their respective sections. The following list of extended warranties shown here are for information. All extended warranties must be supplied whether listed below or not. Refer to Specifications inclusive for requirements.

UPDATE WARRANTIES AND SPEC REFERENCES BELOW

.1 Finish Carpentry – Section 06 20 00 – 5 years

.3 Warranties and Guarantees shall commence at Date of Substantial Performance of the Contract as certified by the Owner.

.4 Warranties and Guarantees shall be original copies, printed on company letterhead, or on a standard company warranty certificate, bearing the name of the company.

.5 Warranties and Guarantees shall indicate:
- .1 Name of the Principal (the Manufacturer/Subcontractor),
- .2 Name of the Obligee (the Owner),
- .3 Name and address of Project,
- .4 Commencement date (Date of Substantial Performance),

.5 Duration of warranty or guarantee,

.6 Clear statement of what is included, and what if any exclusions there are, and

.7 Signature of Principal's representative having signing authority.

END OF SECTION

1 EXAMINATION

.1 Acceptance of Conditions

.1 The General Contractor shall examine all existing or pre-determined conditions, prior to commencing work in that area, and report to the Owner all conditions unacceptable for work to proceed. Commencement of work shall imply acceptance of conditions as is.

.2 Subcontractors shall examine all existing or pre-determined conditions affecting their portion of the Work, prior to commencing such work, and report to the Contractor all conditions unacceptable for work to proceed. Commencement of work shall imply acceptance of conditions as is.

2 PREPARATION

.1 Field Engineering

.1 Locate, confirm and protect control points prior to starting the Work. Preserve permanent reference points during construction.

.2 Establish reference lines and elevations. Locate and lay out by instrumentation.

.2 Records

.1 Maintain a complete, accurate log of control points and survey work as work progresses.

3 CUTTING AND PATCHING

.1 Submit a written request in advance, for approval of cutting or alteration which affects:

.1 Structural integrity of any element of Project.
.2 Integrity of weather-exposed or moisture-resistant elements.
.3 Efficiency, maintenance, or safety of any operational element.
.4 Visual qualities of sight-exposed elements.
.5 Work of Owner or separate contractor.

.2 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.3 After uncovering, inspect conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

.4 Perform cutting, fitting and patching, including excavation and fill, to complete the Work. Perform work to avoid damage to other work.

.5 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.6 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.

.7 Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with fire stopping material, full thickness of construction element.

.8 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

.9 Provide all openings greater than 200mm in non-structural elements of work for penetrations of mechanical and electrical work. Mechanical and Electrical Subcontractors shall provide all sleeves and locations for sleeves. The cost of all cutting and patching required by Mechanical and Electrical Subcontractors shall be paid for by those trades.

.10 Ensure that all cutting and patching work, including that by Mechanical and Electrical Subcontractors, is properly performed by the respective trades skilled in that line of work. Restore work with new products in accordance with Contract Documents.

4 LOCATION OF EQUIPMENT AND FIXTURES

.1 Location of mechanical and electrical equipment, fixtures and devices indicated or specified, are to be considered as approximate. Final location of such items will be determined on site, based on integration with structural and architectural elements, and as required by coordination with other trades. In the event of a conflict, final determination of location of these items rests with the Owner.

.2 Prepare and submit for review by the Owner, interference field drawings, to indicate relative position of various services and equipment, at the following locations as a minimum:

.1 Under all rooftop mechanical units.
.2 At locations of all major ductwork, piping, and conduit crossovers.
.3 Where ductwork passes under major structural elements.

.3 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.4 Request a review of items by Owner once rough-in is underway, prior to final installation, and obtain approval for actual locations.

5 CONCEALMENT

.1 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas, except where indicated otherwise.

.2 In existing building, all pipes shall be enclosed in shafts. All conduit shall be placed in accordance with approved conduit shop drawings.

6 LIGHTING FIXTURES AT SUSPENDED CEILINGS

.1 Ensure that secure support is provided for lighting fixtures by suspended ceilings, or by separate hangers, or by both.

.2 Coordinate the ceiling system and lighting fixture installations to provide adequate support.

.3 Submit affidavits with acceptable design information confirming that the installation of the suspended ceiling system and/or separate fixture hangers will provide adequate support for the lighting fixtures without exceeding specified deflection tolerances for the ceiling system.

.4 Conform to current requirements of the Electrical Safety Authority (ESA).

7 EXISTING SERVICES

.1 Where work involves the interruption of, or connection to existing services, carry out such work as directed by governing authorities, with minimum of disturbance to pedestrian and vehicular traffic.

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

.3 Submit schedule to, and obtain approval from Owner for any shutdown or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.

.4 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.

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

.6 Remove abandoned service lines to distance of 1821mm from foundations. Cap or otherwise seal lines at cut-off points as directed by Owner.

.7 Record locations of maintained, re-routed and abandoned service lines.

8 PROTECTION OF WORK IN PROGRESS

.1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Owner, at no increase in Contract Price.

.2 Prevent overloading of any part of the building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Owner.

.3 Protect finished surfaces with overlays of protective materials such as Kraft paper, cardboard, or plywood, as required for individual applications to provide adequate protection.

END OF SECTION

1 GENERAL

.1 Conduct cleaning and disposal operations to comply with local ordinances and environmental protection legislation.

.2 Store volatile wastes in covered metal containers, and remove from premises at end of each working day.

.3 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

2 CLEANING DURING CONSTRUCTION

.1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste material and debris from the work areas and deposit in waste container at the end of each working day.

.3 Vacuum clean interior areas prior to start of finishing work. Maintain areas free of dust and other contaminants during finishing operations.

.4 Individual Subcontractors are responsible for the daily clean-up and removal of debris related to, or generated by, their own work. The overall responsibility for project cleanliness rests with the Contractor.

3 WASTE MANAGEMENT

.1 Audit, separate and dispose of construction waste generated by new construction or by demolition of existing structures in whole or in part, in accordance with Ontario Regulations 102/94 and 103/94 made under the Environmental Protection Act.

.2 Fires, and burning of rubbish or waste on site is prohibited.

.3 Burying of rubbish or waste materials, except as specified herein, is prohibited.

.4 Disposal of waste or volatile materials such as mineral spirits, oil, gasoline or paint thinner into ground, waterways, or sewer systems is prohibited.

.5 Empty waste containers on a regular basis to prevent contamination of site and adjacent properties by wind-blown dust or debris.

4 FINAL CLEANING OPERATIONS

.1 Immediately following Date of Substantial Performance, and prior to Owner occupancy of the building or portion of the building affected by the Work, conduct full and complete final cleaning operations.

.2 Final cleaning operations shall be performed by an experienced professional cleaning company, possessing equipment and personnel sufficient to perform full building cleaning operations.

.3 Remove all surplus products, tools, construction machinery and equipment not required for the performance of remaining work, and thereafter remove any remaining materials, equipment, waste and debris.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.5 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.6 Cleaning operations shall include the removal of all stains, spots, scuff marks, dirt, dust, remaining labels, adhesives or other surface imperfections.

.7 Remove all paint spots or overspray from all affected surfaces.

.8 Clean and polish all glass and mirrors. Replace broken, scratched or disfigured glazing. Remove remaining manufacturer's and safety "X" labels.

.9 Clean and polish all finished metal surfaces such as enameled or stainless steel, chrome, aluminum, brass, and bronze.

.10 Clean and polish all vitreous surfaces such as plumbing fixtures, ceramic tile, porcelain enamel, or other such materials.

.11 Clean all ceramic tile surfaces in accordance with the manufacturer's instructions, and apply final coat of sealer where specified.

.12 Clean inside of all millwork and cabinetry.

.13 Vacuum, clean and dust behind grilles, louvres and screens.

.14 Sealing and waxing of resilient floor surfaces shall be done by Contractor in accordance with manufacturer’s written instructions. Coordinate final cleaning and scheduling of sealing and waxing.

.15 Broom clean and spray wash all exterior paved surfaces.

.16 Remove dirt and other disfiguration from exterior surfaces.

.17 Clean all roofs, gutters, downspouts, areaways, drywells, and drainage systems.

.18 Clean all equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment.

END OF SECTION

1 INSPECTION AND DECLARATION PROCEDURES

.1 Arrange for, conduct and document final inspections, close-out and commissioning at the completion of the Work in accordance with the Conditions of the Contract, Divisions 00 & 01, Specifications and Drawings, and as described herein this Section.

2 SUBSTANTIAL PERFORMANCE

.1 When the Contractor considers that the Work is substantially performed, or if permitted by the lien legislation applicable to the Place of the Work a designated portion thereof which the Owner agrees to accept separately is substantially performed, the Contractor shall, within one Working Day, deliver to the Owner and to the Owner a comprehensive list of items to be completed or corrected, together with a written application for a review by the Owner to establish Substantial Performance of the Work or substantial performance of the designated portion of the Work. Failure to include an item on the list does not alter the responsibility of the Contractor to complete the Contract.

.2 The Owner will review the Work to verify the validity of the Contractor's application for Substantial Performance of the Work and shall promptly, and in any event no later than 30 calendar days after receipt of the Contractor's complete deficiency list and application take the following steps:

.1 Prepare a final deficiency list incorporating all items to be completed or corrected, including any incomplete or unsubmitted Close-Out Documentation. Each item shall have an indicated value for correction or completion. In establishing such values, the Owner will apply the following rules:

.1 no individual deficiency will be valued at less than two hundred dollars ($200.00); and

.2 where two copies of the red-lined record drawings have not been submitted prior to or as part of the Contractor's application, an amount determined by the Owner within the range of one-half percent (0.5%) and one percent (1%) of the Contract Price will be assigned to such incomplete Work.

.3 In addition to but not limited to Items 2.1 and 2.2, the following Authorities Having Jurisdiction reports shall accompany the Contractor's application for Substantial Performance. These items must be complete in all respects, and all verification certificates and reports having been submitted and approved by the Owner

.1 Building and Fire Department Occupancy Permits or Final Inspection Report with notice of "Approval to Occupy"
.2 Gas fired appliances inspection,
.3 Plumbing Inspection,
.4 Domestic Water Quality Test Report,
.5 Sprinkler dry test verification letter stamped and signed by sprinkler design Engineer,
.6 Fire Alarm verification (include legible technicians worksheets),
.7 Emergency Lighting verification,
.8 Electrical distribution system inspection,

.9 ESA Hydro Certificate
.10 TSSA Elevator Certification

.3 Having completed the requirements set out in 2.2 and 2.3,

(a) the Owner shall advise the Contractor in writing that the Work or the designated portion of the Work is not substantially performed and give reasons why, or

(b) the Owner shall state the date of Substantial Performance of the Work in a certificate and issue a copy of that certificate to the Contractor.

3 DEFICIENCY REVIEWS POST SUBSTANTIAL PERFORMANCE

.1 Following the issuance of the Certificate of Substantial Performance and prior to the Contractor's application for Final Payment and release of any monies retained as "Finishing Holdback", the Contractor shall continue to complete unfinished work and correct deficiencies. At the request of the Contractor, the Owner shall conduct up to two general deficiency reviews during this period.

.2 The Final Deficiency Review will be undertaken only if the Contractor has inspected the Work, and states in writing that the unfinished work noted in their application for Substantial Performance has been 100% completed.

.3 Should further review by Owner be required due to failure of the Work to comply with Contract Documents or the criteria set out herein, the Owner will deduct amount of Owner's compensation for re-inspection services from monies owed to the Contractor.

4 DEFICIENCY HOLDBACK

.1 Following certification of Substantial Performance of the Work, the Owner may retain from the Deficiency Holdback an amount equivalent to 200% of the aggregate value of all items identified in the deficiency list established in accordance with 2.2.1. Such amount, less any amounts, fees, damages, or other costs (including additional consulting costs, legal costs, etc.) incurred by the Owner to complete or correct any of the items in the deficiency list that are not completed or corrected by the Contractor, shall be released by the Owner as part of the Contractor’s final payment.

.2 The Contractor shall complete the Work within forty (40) calendar days of the date certified as the date of Substantial Performance of the Work;

.3 Notwithstanding any other provisions of the Contract, no payments will be processed between Substantial Performance of the Work and Total Completion.

.4 The Owner reserves the right to contract out any or all unfinished Work if it has not been completed within forty (40) days of Substantial Performance of the Work using, without limitation, the funds retained in accordance with 4.1, without prejudice to any other right or remedy and without affecting the warranty period. The cost to the Owner of completing the Work including wages and materials shall be deducted from the Contract Price.

.5 There being no claims for lien registered against title to the Place of the Work, the Deficiency Holdback shall be released to the Contractor on the 61st day following the publication of the certificate of Substantial Performance of the Work

5 LIEN PERIOD AND RELEASE OF BASIC HOLDBACK

.1 Commencement of Lien Periods

.1 The day following the date of publication of Certificate of Substantial Performance shall be the date of commencement of the Construction Lien Period prior to release of basic holdback, unless required otherwise by lien statute of the Place of the Work.

.2 At the expiry of the Construction Lien period, the Contractor shall make application for Release of Basic Holdback.

.3 The Owner shall prepare the Certificate for Payment for release of basic holdback, and promptly upon receipt of the necessary documentation, issue the Certificate for Payment to the Owner.

6 FINAL INSPECTION AND PAYMENT

.1 Submit a signed statement stating following have been performed:

.1 Work has been reviewed for compliance with Contract Documents,
.2 All deficiencies have been corrected,
.3 All unfinished work has been completed, and
.4 Work is complete and ready for Final Inspection.

.2 When items noted above are completed, the Owner and the Contractor will perform a final inspection of the Work.

.3 If the Work is deemed incomplete, complete outstanding items and request a re-inspection.

.4 If the Work is deemed to be complete, the Owner will issue Final Payment.

END OF SECTION

1 OPERATION AND MAINTENANCE MANUALS

.1 General

.1 Prepare Operation and Maintenance Manual during the course of construction and have completed prior to Date of Substantial Performance.

.2 Submission

.1 Maintain one copy of the Operation and Maintenance Manual volume(s) for periodic review and comment, as requested by the Owner during the course of construction.

.2 Submit two (2) final hard copies and one (1) USB device with PDF version of all documents of the final completed volume(s) with the application for Substantial Performance.

.3 Format

.1 Bind data in commercial quality, 219 x 279mm, "D" ring binders, having clear cover and spline pockets.

.2 Identify each binder on the cover and spline with the following:

OPERATION & MAINTENANCE MANUALS
School Name and Project
VOLUME____OF ___

.3 Provide table of contents and index tab sheets for each volume. Itemize and tabulate contents.

.4 Provide drawings with reinforced punched binder tab, or insert into clear sleeves in folded format. Group drawings as to content, and index for quick reference.

.4 Contents - Each Volume

.1 Table of Contents: provide title of Project, Date of submission and names:

.1 Addresses, and telephone numbers of Contractor with name of responsible parties;

.2 Schedule of products and systems, indexed to content of volume.

.2 For each product or system: List names, addresses and telephone numbers of sub-contractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.4 Operation and Maintenance Manuals shall contain, as a minimum, the following information:
- .1 List of Contents; cross-referenced to each Volume.
- .2 Contact information for maintenance and repairs
- .3 Warranty and guarantee certificates
- .4 Equipment start-up and troubleshooting instructions
- .5 Equipment schematics & diagrams
- .6 Catalogue of all maintenance materials and quantities
- .7 Complete list of Contractor, Subcontractors and suppliers, indicating name, address, telephone & fax numbers, email addresses, name of contact person and description of work done.
- .8 Complete list of products used in the work, indicating product name and manufacturer for each listing.
- .9 Copy of Finish Hardware List, complete with all amendments and revisions, if applicable.
- .10 Schedule of paints and coatings. Include sufficient explanation to fully identify each surface with the applicable paint or coating used. Enclose copy of Colour Schedule.
- .11 All “reviewed” shop drawings.
- .12 Maintenance instructions for all finished surfaces.
- .13 Brochures and cuts of all equipment and fixtures.
- .14 Operating and maintenance instructions for all equipment.
- .15 All Warranties and Guarantees required by the Specifications for this Work.

.5 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.6 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

2 AS-BUILT DRAWINGS

.1 Supply two (2) complete sets of printed project drawings, (one complete CADD set on disc) and two (2) complete sets of specifications for the purpose of recording as-built conditions.

.2 Maintain as-built drawings on site and update as construction progresses. Allow periodic review by Owner as requested.

.3 Record information concurrently with construction progress. Do not conceal work until required information is recorded.

.4 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
- .1 Measured depths of elements of foundation in relation to finish first floor datum.
- .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.4 Field changes of dimension and detail.
.5 Changes made by change orders.
.6 Details not on original Contract Drawings.
.7 References to related shop drawings and modifications.

.5 As-Constructed Topographic Survey. All topographic information is to be based on the fixed bench mark. eg. top of a fire hydrant, iron bar etc.
Include the following:
.1 Property boundary.
.2 Topographic lines at 0.5metre intervals within the property and extending 1.0metre into all adjacent properties.
.3 All trees located and sized.
.4 Sidewalks, curbs and complete road width of asphalt as well as extent of all other asphalt areas and curbs.
.5 All perimeter and on-site fencing.
.6 Fire hydrants.
.7 Hydro and other utility poles and transformers, junction boxes, pedestals, etc.
.8 Manholes and catch basins with underside of inverts.
.9 Watercourse if applicable.
.10 Location of street services: storm (including invert elevations), sanitary (including invert elevations), water, Bell, gas, cable TV, etc.
.11 Locate all easements if applicable.
.12 Geodetic elevation

.6 Provide PDF and CADD file.

3 EQUIPMENT AND SYSTEMS

.1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and

diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include all test and balancing reports

.15 Additional requirements: As specified in individual specification sections.

4 MATERIALS AND FINISHES

.1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional Requirements: as specified in individual specifications sections.

5 MAINTENANCE MATERIALS, SPARE PARTS & TOOLS

.1 Provide spare parts in quantities specified in individual specification sections. Provide identical items to those installed in the Work.

.2 Provide maintenance materials in quantities specified in individual specification sections. Provide identical items of same manufacturer, dye lot or production run as items in the Work.

.3 Provide special tools in quantities specified in individual specification sections, and tag items identifying their function and equipment or products to which they are associated.

.4 Receive and catalogue all items. Check inventory and include approved listings in Operations and Maintenance Manual.

.5 Obtain receipts for delivered products and submit prior to Substantial Performance.

.6 Quality

.1 Spare parts, maintenance materials and special tools provided shall be

new, not damaged or defective, and of the same quality and manufacture as products provided in the Work.

.2 If requested, furnish evidence as to type, source and quality of Products provided.

.3 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.7 Delivery, Storage, And Handling

.1 Deliver all materials required as maintenance materials, spare parts or special tools, to the site, include shipping costs, and store as directed.

.2 Store spare parts, maintenance materials and special tools in a manner to prevent damage, or deterioration.

.3 Store in original and undamaged containers with manufacturer's seals or labels intact.

.4 Store materials subject to damage from severe climatic changes in a climate-controlled, weatherproof enclosure.

.5 Store paints and freezable materials in a moderately heated and ventilated room.

6 WARRANTIES AND BONDS

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.

.4 Start date for all warranties are to be the Date of Substantial Performance, regardless if put into use.

.5 Verify that documents are in proper form, contain full information, and are notarized. Co-execute submittals when required.

.6 Retain warranties and bonds until time specified for submittal.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

.1 Labour, Products equipment and services necessary for the finish carpentry Work in accordance with the Contract Documents.

1.2 **REFERENCES**

.1 ANSI A208.1, Particleboard.

.2 ANSI/NEMA LD 3, High-Pressure Decorative Laminates.

.3 ASTM F1667, Driven Fasteners: Nails, Spikes and Staples.

.4 Architectural Woodwork Manufacturers Association of Canada (AWMAC).

.5 Architectural Woodwork Standards (AWS) - Quality Standards for Architectural Woodwork.

.6 CSA O115-M, Hardwood and Decorative Plywood.

.7 CAN/CSA O141, Softwood Lumber.

.8 CSA O151-M, Canadian Softwood Plywood.

.9 National Hardwood Lumber Association (NHLA) Rules for the Measurement and Inspection of Hardwood and Cypress.

.10 National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber.

1.3 **SUBMITTALS**

.1 Shop drawings: Submit shop drawings of finish carpentry Work in accordance with Section 01 30 00 indicating materials, thicknesses, sizes, finishes, wood species, grades, profiles, connection attachments, shop jointing, field jointing, reinforcing, anchorage, fastener types and sizes, location of exposed fastenings, mechanical and electrical service routes, service outlets, cutout locations, and sizes. Include erection drawings, plans, elevations, sections, and details as applicable.

.2 Samples: Submit samples of the following in accordance with the requirements of Section 01 30 00:
- .1 Two representative pieces of each type of wood to receive a stained or natural finish.
- .2 Two representative pieces of each type of wood finished as specified.
- .3 Two of each colour, pattern, gloss, and texture of plastic laminate, in manufacturer's standard tag size.
- .4 One of each item of finish carpentry hardware.

1.4 QUALITY ASSURANCE

.1 Execute Work of this Section by member of AWMAC, with 5 years experience in finish carpentry Work of comparable complexity and scope. Submit proof of experience upon Consultant's request.

.2 Fabricate finish carpentry Work in accordance with AWS Quality Standards, Premium Quality materials and installation unless otherwise indicated. Perform Work in accordance with the definition of Good Workmanship as defined in the AWS Quality Standards.

.3 Remove and replace finish carpentry Work which does not conform to the AWS Quality standards or as amended by these Specifications.

.4 Mock-up:

- .1 Shop fabricate one mock-up of a base cabinet, wall cabinet, and counter top for each type of surfacing specified, complete with hardware and shop applied finishes, installed in location acceptable to Consultant.
- .2 Arrange for Consultant's review and acceptance, allow 48 hours after acceptance before proceeding with Work.
- .3 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of Work if accepted by Consultant. Remove and dispose of mock-ups which do not form part of Work.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store, and handle finish carpentry in accordance with the AWS Quality Standards. Control the temperature and humidity in accordance with the AWS recommendations, before, during, and after finish carpentry delivery, and also during storage and installation.

.2 Cover finished plastic laminated work with heavy kraft paper or put in cartons during shipment. Protect installed surfaces by approved means. Do not remove until immediately before final inspection.

1.6 EXTENDED WARRANTY

.1 Submit an extended warranty for plastic laminate work of this Section in accordance with General Conditions, except that warranty period is extended to 2 years from date of Substantial Performance of the Work.

- .1 Warrant against defects in material and workmanship including but not limited to opening of joints, cracking, shrinkage, warpage, and delamination of plastic laminate.
- .2 Coverage: Complete replacement including affected adjacent Work.

2 Products

2.1 **MATERIALS**

.1 General: All materials under Work of this Section, including but not limited to, adhesives and mastics, are to have low VOC content limits.

.2 Concealed framing lumber: Eastern Spruce, Balsam Fir, or Jack Pine, to CAN/CSA O141, NLGA, and AWS Custom Grade, S4S, average moisture content 7% +/- 2% at installation.

.3 Hardwood lumber: Plain sliced grade A white birch to NHLA and AWS Premium Grade, S4S, average moisture content 7% +/- 2% at installation.

.4 Hardwood Plywood (for cabinet frames, stretchers and blocking): Graded in accordance with AWMAC/AWI; average moisture content of 6-8 percent; species and grade as follows:
- .1 Shop sanded veneer core Birch plywood, 19 mm or 25 mm thickness.

.5 Softwood plywood for drawer body construction: Birch veneer core plywood (all laminations Birch veneer), interior grade plywood, G2S, sanded
- .1 Quality Standard: GOST 3916.1 (Russian), Veneer Grade: BB/BB;
- .2 Thicknesses: 12 mm (nine laminations) and 15 mm (eleven laminations)

.6 Hardwood veneer:
- .1 Birch unless otherwise indicated, conforming to ANSI/HPVA HP-1 having finishes and meeting grades as follows:
  - .1 Transparent finish, Grade AA.
- .2 Face veneer cut: Rotary cut.
- .3 Edging: Solid Birch.
- .4 Sizes, thickness, and shapes as indicated.

.7 Shelving: 19 mm thickness for spans up to 700 mm, 25 mm thickness for longer spans, Birch hardwood core veneers, with hardwood veneer edge banding.

.8 Cabinet Backs: Birch plywood, 12 mm thickness.

.9 Plastic laminate: Provide plastic laminates conforming to ANSI/NEMA LD 3 as follows:
- .1 Flatwork face sheet: 1.2 mm thick, heavy wear resistance.
- .2 Vertical interior face sheets: 0.8 mm thick.
- .3 Postformed face sheet: 0.8 mm thick.
- .4 Backing sheet: thickness to match face sheet, high pressure laminate, manufactured by same manufacturer as face sheet.
- .5 Plastic laminate: Plastic laminate types and colours to be provided with shop drawings. Counter top laminate colour: Pionite AG471 Cinder Grey OR Formica 8830-58 Elemental Concrete, Matte Finish

.10 Particle board core (for cabinet door and drawer fronts): ANSI A208.1, Grade M2 of thickness indicated. Particleboard to be bound with waterproof adhesive and meeting the following minimum criteria:
- .1 Density: minimum 705 kg/m^3.

.2 Internal bond: 0.45 N/mm^2.
.3 Modulus of rupture: 14.5 N/mm^2.
.4 Modulus of elasticity: 2250 N/mm^2.
.5 Face screw holding: 1000 N.
.6 Edge screw holding: 900 N.

.11 Wood door: 35 mm thick hollow core wood door hardwood veneer, finish on all sides to match adjacent cabinetry.

.12 Laminating adhesive: CSA O112 Series, water resistant type, low VOC content, selected by laminate manufacturer for intended end use.

.13 Draw bolts and splines: Type as recommended by fabricator.

.14 Nails and staples: Conforming to ASTM F1667; Size and type to suit application, galvanized for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.

.15 Bolts, nuts, washers, blind fasteners, lags and screws: Size and type to suit application. Stapling is not acceptable.

.16 Adhesive and bituminous mastic: Selected by the millwork fabricator with low VOC content.

2.2 HARDWARE

.1 The following hardware is the minimum quality standard for the work of this Section. Alternatives may be considered provided they are approved by Consultant prior to ordering of products.

.2 19 mm Door Hinges: Blum Press–In 170 degree self close full overlay or Salice equivalent. Hinges to be provided with factory installed knock in dowels. For quantity of hinges required per door, refer to hinge manufacturer’s manual. Wood screw fastening system will not be accepted.

.3 19 mm Door Hinge Plates: One piece plate with min. 3 mm height adjustment. Hinge plates to be installed using pre-mounted system screws, Euro screw in 5mm pre-drilled hole. Wood screw fastening system will not be accepted.

.4 19 mm Door Dampener: Blumotion 971A with Cruciform Base or Salice equivalent required for all 19mm doors to allow for soft closing.

.5 19 mm Bumpers: Polyurethane 3 mm high X 10 mm diameter / minimum 2 per door and drawer front.

.6 Shelf Standards and Clips: KV 255 pilaster and KV 256 clip – satin nickel finish / Note: Pilasters to be fully recessed into gables.

.7 Drawer and Door Pulls: Stainless Steel D- Pull / 8 mm diameter X 96 mm centres - complete with with 8/32 machine screws.

.8 Coat Rods and Flanges: Richelieu # 122108140 and 1225140.

.9 Elbow catches: Richelieu Heavy Duty Elbow Catch # 5540180 / nickel finish / required at all two door units.

.10 Locks:

.1 Cam locks/deadbolt locks complete with lock core by Hafele, type to suit application and installation.

.2 Teacher's closet door automatic door bolt to be supplied and installed by cabinet manufacturer; ‘LOCDL200' or ‘LOCDL300' as applicable by Richelieu, or approved alternative by Blum or Salice.

2.3 PLASTIC LAMINATE WORK

.1 Perform plastic laminate Work in accordance with AWS Quality Standards and ANSI/NEMA LD 3.

.2 Ensure adjacent parts of continuous laminate work match in colour and pattern.

.3 Laminate plastic laminates to core materials in accordance with manufacturer's instructions.

.4 Fabricate core surfaces and profiles with continuous support and bond over entire surface to receive plastic laminate.

.5 Apply plastic laminate backing sheets to balance shrinkage stresses induced by plastic laminate face sheets.

.6 Minimize joints in plastic laminate Work; do not install joints in plastic laminate Work in less than 2400 mm o.c. Locate joints minimum 610 mm from cut-outs. Offset core and plastic laminate facing joints.

.7 Form shaped profiles and bends as indicated, using postformed grade laminate to laminate manufacturer's instructions.

.8 Use straight self-edging laminate strip to match adjacent colour, finish, gloss, and pattern to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.

.9 Apply laminated plastic liner sheet to interior of cabinetry and where indicated.

.10 Fabricate units by solid surfacing manufacturer's certified or approved fabricator/ installer. Fabricate built-up profiles as indicated.

2.4 **FABRICATION**

.1 Be responsible for methods of construction and for ensuring that materials are rigidly and securely attached and will not be loosened by the work of other sections.

.2 Coordinate locations of concealed supports and blocking with other parts of Work. Provide cutouts for outlet boxes and other fixtures.

.3 Fabricate work in a manner which will permit expansion and contraction of the materials without visible open joints. Conceal joints and connections in wherever possible.

.4 Set nails and countersink screws, apply wood filler to indentations, sand smooth and leave ready to receive finish.

.5 Mitre exposed corners, no end grain shall be visible in completed installation.

.6 Finished millwork shall be free from bruises, blemishes, mineral marks, knots, shakes and other defects and shall be selected for uniformity of colour, grain and texture.

.7 Shop assemble finish carpentry to accommodate delivery and handling and to ensure passage through building openings.

.8 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.

.9 Fabricate sills, screens, frames and moldings to profiles shown.

.10 Countertops:

.1 Core material shall be 19 mm thick particleboard with the exception of window stools and countertops with sinks installed, these shall be plywood core.

.2 Use draw bolts and splines in countertop joints. Maximum spacing 450 mm a.c., 76mm from edges.
.3 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 3050 mm.
.4 Keep laminate joints 305 mm from sink cutouts. Obtain Consultant's approval for locations of all laminate joints in counter tops prior to fabrication .
.5 Make joints where approved to hairline width. Offset joints in plastic laminate from joints in substrate.
.6 Provide cutouts as required for inserts, grilles, outlet boxes and other fixtures. Radius internal corners, chamfer laminate edges, and apply uncut shellac sealer to exposed edges of substrate at all cutouts.
.7 Nosing: 32 mm x 3 mm PVC edge band.
.8 Backsplash: square-edged, as detailed on the drawings.

2.5 CABINET FABRICATION

.1 General:
.1 Cabinet Components: As specified in AWMAC QSI Section 400-G as amended by the following requirements;
.2 Hardware: Supply hinges, drawer slides, products and materials as specified.
.3 Door and Drawer Fronts: Particle board core.
.4 Cabinet Boxes: Particle board core.
.5 Rails, Toe Kicks and Cabinet Bases: Hardwood veneer core.
.6 Backs: Particle board core.
.7 Blocking: Solid lumber.
.8 Provide Semi-Exposed surfaces in same quality and finish as Exposed parts.
.9 Adjustable Shelf Techniques/Supports: AWMAC QSI 400B-T-9;
.1 Custom Grade: Adjustable shelf multiple holes (min. 5 mm diameter, single pin).
.10 Joinery of case body members: AWMAC QSI 400B-T-10, stop-dado joints which are glued and mechanically fastened with screws.
.11 All cabinets provided for this project shall meet or exceed the Custom requirements of AWMAC QSI 400-B-C-1 thru 6.

.2 Wood Cabinet Construction: AWMAC QSI Section 400-G-7 (A), flush overlay style, Custom Grade as amended by the following requirements;
.1 Exposed and Semi-Exposed Parts (except countertops): Veneer core plywood with premium face veneer grades as specified.
.2 Exposed and Semi Exposed Parts: Panel edge band; solid wood same species as face. Lapped joint with top and bottom bands lapping side bands.
.3 Wood Veneer Grain Direction: AWMAC QSI Section 400 A-T-1;
.1 Premium Grade: Grain direction to run vertically for all doors, drawer fronts and overhead bulkheads.

.3 Wall Cabinets: Finish to match base cabinets.
.1 Provide top and bottom filler and corner panels.
.2 Provide scribes and fillers with maximum 25 mm exposed dimension.
.3 Underside of Cabinets: Type 'B' flush (one tight line visible).

.4 Cabinet backs: Wall hung cabinet backs must not be relied upon to support the full weight of the cabinet and its anticipated locad for hanging/mounting purposes. Method of back joinery and hanging/mounting mechanisms should transer the load to case body members.

.4 Shelving: AWMAC QSI 400B-T-9 Premium Grade, as amended by the following:
- .1 Construction:
  - .1 Multiple hole configuration at 32 mm on centre, 'System 32'.
  - .2 Hardwood veneer on tops and bottoms and 3 mm thick PVC edge banding on exposed edges to match exposed parts.
  - .3 Core: Hardwood core veneer with hardwood veneer edge banding. 19 mm thickness up to 700 mm spans, 25 mm thickness for spans greater than 700 mm.
- .2 Provide adjustable shelves in all cabinets.

3 Execution

3.1 **INSTALLATION**

.1 Install Work in accordance with AWS Quality Standards and tolerances for Architectural Woodwork. Set and secure finish carpentry in place, rigid, plumb, square, and level.

.2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate columns, fixtures, outlets, or other projecting, intersecting or penetrating objects leaving a 0.8 mm gap maximum.

.3 Coordinate cutouts for plumbing fixtures, inserts, appliances, outlet boxes, and other fixtures, in finish carpentry. Round internal corners of cut-outs and seal exposed cores.

.4 Form joints to conceal shrinkage.

.5 Install draw bolts and splines in laminated plastic counter top joints at maximum spacing 450 mm o.c., and 75 mm from edge. Make joints flush, hairline butt joints.

.6 Install finishing hardware accurately and securely in accordance with manufacturer's directions, adjust and clean.

.7 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.

.8 Apply bituminous coating over wood framing members in contact with masonry or cementitious construction.

.9 Hardwood caps:
- .1 Provide 13 mm thick plywood blocking mechanically fastened and glued to masonry with hardwood trim in reveal.
- .2 Install 38 x 190 mm hardwood cap with rounded exposed edges and ends, glued and mechanically fastened to wood blocking with countersunk fasteners complete with plugs.

.10 Benches/Storage cubicles:
- .1 Install 400 mm deep cubicles with vertical divisions as indicated on drawings.
- .2 Mechanically fasten to substrate with blocking and countersunk/plugged fasteners.

.11 Fastening:
- .1 Coordinate wall securement, anchorage, and blocking for finish carpentry items.
- .2 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
- .3 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
- .4 Provide heavy duty fixture attachments for wall mounted cabinets.
- .5 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round cleanly cut hole and plug with wood plug to match material being secured.

.12 Remove and replace damaged, marked, or stained finish carpentry.

.13 Teachers Closets Door hardware:

1. Keyed cylinder for doors: provided by Section 08 70 00 Finish hardware and installed by Section 06 20 00.

END OF SECTION

PART 1: GENERAL

1.1 WORK INCLUDED

.1 Supply and installation of finish hardware.

.2 It is intended that the following list of hardware will cover all finish hardware to complete the project. Omissions and discrepancies shall be brought to the Consultant's attention during the bidding period.

1.2 RELATED SECTIONS

.1 06 20 00 Finish Carpentry

1.3 PRODUCTS SUPPLIED BUT NOT INSTALLED IN THIS SECTION

1.4 ALLOWANCES

.1 **N/A**

1.5 REFERENCES

.1 Recommended locations for Architectural Hardware for Standard Steel Doors and Frames - Door and Hardware Institute

.2 Recommended locations for Architectural Hardware for Flush Wood Doors – Door & Hardware Institute

.3 NFPA 80-Standard for Fire Doors and Windows

.4 Sequence Format for Hardware Schedule – Door & Hardware Institute

.5 Key Systems and Nomenclature - Door & Hardware Institute

.6 Abbreviations and Symbols used in Architectural Door and Hardware Schedules and Specifications – Door & Hardware Institute

1.6 SUBMITTALS

.1 Updated Finish Hardware Schedule:

.1 Prepare and submit within fifteen (15) days of a receipt of award of Contract eight (8) complete detailed hardware schedules prepared in vertical format as detailed in Reference 1.5.4.

.2 Product Data:

.1 Provide in a two ring binder six (2) copies of product data sheets with the finish hardware schedule showing all items of hardware to be used on the project.

.3 Samples:

.1 When requested in writing, provide (to the Consultant's Office) one sample of each hardware item complete with fasteners, within thirty (30) calendar days of award of Contract. Samples to be clearly labeled with their hardware schedule designation and manufacturers' name and model number. Samples may be incorporated into the work.

.4 Templates:

.1 Furnish templates within fifteen (15) days after award of Contract.

.5 Keying Schedule

.1 Provide three (3) copies of keying schedule for review prepared and detailed in Reference 1.5.5. Refer to attached Owner keying schedule. Include all special keying notes and stamping instructions. Locks and cylinders are not to be ordered until the key schedule has been approved by the Consultant.

.6 Wiring Diagrams

.1 Furnish a written description of the functional use of all electrical hardware. Include door and frame elevations showing the location of each item of electrical hardware to be installed, including a diagram showing number and size of all conductors.

.7 Operations and Maintenance Data

.1 Prior to Substantial Completion, furnish to the owner, three (3) copies of an owner's operation and maintenance manuals in a three ring binder with the following information:

.1 Maintenance instructions for each hardware item

.2 Catalogue cut sheets and Product Specifications or each product

.3 Parts list for each product

.4 Copy of final "as-built" finish hardware schedule

.5 Copy of final keying schedule

1.7 QUALITY ASSURANCE

.1 Review installation procedures with the hardware distributor's designated Installer(s). Hold instruction meetings with the installers prior to installation and subsequent review meetings during the installation period. Submit minutes of meetings to the Consultant.

.2 Substitutes

.1 Only approved products specified will be accepted. Make substitution request in accordance with Division 1. Include product data and indicate benefit to the project.

.3 Supplier Qualifications

.1 Successful hardware distributor to have a minimum of five (5) years experience in the door and hardware industry. The distributor to have on staff an Architectural Hardware Consultant (A.H.C.) who will be responsible for scheduling, detailing, ordering and co-ordination of the finishing hardware for this project. This individual shall be required for job site visits if so requested by the Consultant, Owner and or installer for any installation problems that may occur.

.4 Pre-Installation Meeting for Hardware:

.1 Prior to installation of hardware, arrange a meeting between manufacturer, distributor, supplier, installers and related trades to review materials, procedures and coordinating related work. Provide mock-up of hardware to be installed for review by the Consultant at this meeting. Where Ingersoll Rand manufacturers are used, Ingersoll Rand products shall be furnished and installed by an authorized Ingersoll Rand Distributor to insure quality compliance, service and Warranty of products. All Ingersoll Rand products are to be included in the mock-up as part of the meeting in Paragraph 4. An Architectural Hardware Consultant (A.H.C.) from Ingersoll Rand will assist the Consultant with the review of the mock-up at this meeting. The hardware supplier is to furnish the necessary arrangements for the attendance at this meeting of the Architectural Hardware Consultant (A.H.C.) from Ingersoll Rand. The approved mock-up is to set the standard of hardware installation for the remainder of the project.

.5 Finish and Security Hardware and Auto Operators to be installed by an Ingersoll Rand Distributor and Systems Integrator; the Distributor shall employ and use Ingersoll Rand trained and certified hardware, auto-operator and security system installers.

1.8 DELIVERY, STORAGE AND HANDLING

.1 Marking and Packaging

.1 All cartons shall be marked with heading number, door number, and key-set symbol where applicable in original packaging provided by the manufacturer. Pack packaged hardware in suitable wrappings and containers to protect it from damage during shipping and storage. Accessories, fastening devices and other loose items shall be enclosed with each applicable item of hardware.

.2 Delivery

.1 Deliver hardware to related trades.

.3 Storage

.1 Store in a clean, dry room with lockable man door and adequate shelving to permit organization so item numbers are readily visible.

1.9 WARRANTY

.1 Provide warranties by the accepted manufacturers:

Hardware Item	**Length of Warranty**
Mortise Hinges	Lifetime

Pivot Sets	2 yrs.
Locks	7 yrs.
Keypad Locks	1 yrs.
Exit Devices	3 yrs.
Door Closers -mechanical	10 yrs.
Door Operators - Electro mechanical	2 yrs.
Door Hold open Devices - Electro mechanical	2 yrs.
Overhead stops/holders	1 yr.
Floor/Wall stops	1 yr.
Electric Strikes/Key Switches/Power Supplies	1 yr.
Electromagnetic Lock Coils	Lifetime

1.10 MAINTENANCE

.1 Maintenance Service

.1 After the building is occupied arrange an appointment with the Owner for instruction of proper use, servicing, adjusting and lubrication of hardware furnished. Submit to the Consultant a list of attendees and meeting date.

.2 Extra Materials

.1 The following items to be transferred by the General Contractor to the Owner in proper manufacturer's cartons once the job has been completed:

.1 3 of each installation tool used for locks/passage/privacy, all type of door closers, and all exit devices.

PART 2: PRODUCTS

2.1 MATERIALS

.1 Screws and Fasteners:

.1 All screws shall be matching finish to their product and shall be manufacturer's standard.

.1 Furnish with finish hardware all necessary screws, bolts and other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use. Factory furnished Fasteners shall be used to install all Hardware. Tech Screws or substitute fasteners are not acceptable and will be rejected.

.2 Furnish fastenings where necessary with expansion shields, toggle bolts and other anchors designated by the Consultant according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer. All closers and exit devices on wood doors shall be thru-bolted. All thresholds shall be fastened with machine screws and anchors. Where specified in the hardware sets, security type fasteners of the type called for are to be supplied.

.3 Design of all fastenings shall harmonize with the hardware as to material and finish.

.2 Hardware Items: types and finishes as listed in the Hardware Schedule

.1 Product Level of Acceptance

.1 Hinges

CH1	ELCH-951 ULC X 2128	C32D
CH2	CH-951 ULC X 2128	C32D
H1	CB1368 114 X 101	C26D
H2	CB1368 127 X114	C26D
H3	STS CB1399 114 X 101 NRP	C32D
H4	CB1379 114 X101	C26D
H5	STS CB1399 114 x 101	C32D

Butt Hinges: Acceptable products to match or exceed the Grades above from the following Manufacturer's; Ives 3CB1 & 3CB1 HW, Stanley CB179, CB191, CB168 & CB199 as per Specifications.

Continuous Hinges: Ives 700 Series & Markar FM300

.2 Locksets & Cylinders

CYL1	20-001 X 31 X CMK GMK D145 EVEREST X Q11-949	626
CYL2	20-021 CMK GMK D145 EVEREST	626
L1	ND95PD RHO CMK GMK D145 EVEREST	626
L2	ND94PD RHO CMK GMK D145 EVEREST	626
L3	ND 40S RHO	626
LR1	A501-566	
L4	ND96PD RHO CMK GMK D145 EVEREST	626
L5	L460P CMK GMK D145 EVEREST	626
L6	MASTER PRO 6621 WO	626
L7	0298-628	
L8	21-002 CMK GMK D145 EVEREST	626
L9	L463P CMK GMK D145 EVEREST	626
L10	ND72PD RHO X N12-002 CMK GMK D145 EVERSET	626
CYL3	20-001 X 31 CMK GMK D145 EVEREST	

626

CYL4	20-013 AR Cam CMK D145 Everest	626
L11	ND10S RHO	626
L12	AL70PD SAT CMK GMK D145 EVEREST 626	
L13	Deadlatch THTL 4510L c 1 1/8” BS 628	
L14	Faceplate TH-FLL-Flat 628	
L15	Lever TH-4560-L	
K1	MASTER KEYS BB	
K2	KEY BLANKS UNCUT D145	
K3	EVEREST GRAND MASTER A	
K4	MASTER KEYS AA	
K5	EVEREST CHANGE KEYS AA1	
K6	EVEREST CHANGE KEYS A1	
K7	EXTRACTOR TOOL 35-057	
K8	SCHLAGE CONSTRUCTION MASTER KEYS	
K9	BITTING LIST 50-123	

Products to match the Grades above. No substitutions permitted for locksets and cylinders

.3 Door Closers

DC1	4040XP EDA TB X ST-3068	689
DC2	4040-18PA	689
DC3	4040-61	689
DC4	4041T STD TB	689
DC5	4041T X STD X ST-3182 TB	689
DC6	4040-18G	689
DC7	4041 REG X ST-1630 TB	689
DC8	4040-18TJ	689
DC9	4041 EDA ST-3068 TB	689
DC10	4041 REG TB	689
DC11	4041T X STD X DEL X ST-3182 TB	689
DC12	4041T X STD X DEL X TB	689
DC13	4041XP SCUSH ST-3068 TB	689

Acceptable products to match or exceed the Grades above from the following Manufacturer’s; Norton 7500 & PR7500, Dorma 8900 & 8900PR Series as per Specifications.

.4 Overhead Stops

OH1	105S TB	630
OH2	104S TB	630
OH3	453S TB	630
OH4	105H TB	630

Acceptable products to match or exceed the Grades above from the following Manufacturer's; Rixson 9, 1 & 2 Series. ABH 9000, 1000 & 4400 Series as per Specifications.

.5 Flatwear

P1	GSH 1180-2 #4B MTG	C32D
P2	GSH 1180-2 X 1180-2 B TO B	C32D
P3	GSH 1180-2 TB	C32D
PP1	GSH 8IA 101 X 406 (3M)	C32D
KP1	GSH 80A 150 X 960 (3M)	C32D
DS1	GSH 250B	C32D
KP2	GSH 80A 150 X 910 (3M)	C32D
DS2	GSH 209	C26D
HP1	GSH 2616H 101 X 406 (CUT FOR CYL)	C32D
HP2	GSH 2616H 101 X 406 (CUT FOR T/T)	C32D
KP3	GSH 80A 150 X 950 (3M)	C32D
P4	GSH 1180-2-SR X 229 T/B	C32D
S1	SIGN BY OTHERS	
KP4	GSH 80A 150 X 975 (3M)	C32A
HP3	GSH 2616H 101 X 406	C32D
P5	GSH 4209-2 TB	C32D
KP5	GSH 80A 150 X 900 (3M)	C32D
HP4	GSH 2616H 101 X 101 CUSTOM (CUT FOR CYL)	C32D
P6	GSH 165 X 1829mm O/A	C32D
PP2	GSH 85N 101 X 406 (CUT FOR CYL) (3M)	C32D
PP3	GSH 85N 101 X 406 (3M)	C32D
HP5	GSH 2616H 101 X 101 CUSTOM (CUT FOR T/T)	C32D
KP6	GSH 80A 150 X 1050 (3M)	C32D

Acceptable products to match or exceed the Grades above from the following Manufacturer's; Canadian Builders Hardware (CBH) & Standard Metal as per Specifications.

.6 Miscellaneous Items

ES1	6111 24 VDC FSE	630
PS1	PS902FA	
MAG1	SEM 7850 (TRI-VOLTAGE)	689
CDL1	CDL 457 X 305 MILL	
FB1	FB458 X 305	626
DPS1	DP2	626
INSTALL	LABOUR TO INSTALL HARWARE	
KC1	1204-A X 300 KEY CAPACITY	
MAG2	SEM 7810-517	689
5654	5654 X 2489	US28

Electric Strikes-Folger Adams 700 Series

Power Supplies-Securitron BPS

2.2 CYLINDERS, KEYING SYSTEMS AND KEY CONTROL

.1 Meet with the Consultant and Owner to finalize keying requirements and obtain keying instructions in writing as outlined in Division 1. Interior locks and cylinders shall be furnished in a new Schlage masterkey system.

.2 Provide temporary construction keying system during construction period. Permanent keys will be furnished to the Owner's Representative prior to occupancy. The Owner will instruct the Contractor to void the operation of the construction keys.

.3 Permanent cylinders to be keyed by factory, combinated in sets or subsets, master keyed or grand master keyed, as directed by Owner. Permanent keys and cylinders shall be marked with the keyset symbol on all keyblanks for identification. These visual key control marks or codes will not include the actual key cuts.

.4 All keying requirements per Owner's Secondary and Elementary School Keying Schematics (attached at end of this Section).

.5 Keying Handover: Prior to handing keys to the Owner, the Contractor shall organize the keys as follows:

.1 For each set of keys attach a hard plastic tag capable of being labeled.

.2 Each plastic tag is to have typewritten or computer generated labels indicating the relevant door number and room number.

.3 An itemized transmittal is to accompany all keys to be handed over.

.4 All keys complete with labeled tags are to be in the key cabinet. Provide complete cross-index system, place keys on markers and hooks in the cabinet as determined by the final key schedule. Provide one each key cabinet and hinged panel type cabinet for wall mounting as noted in detailed hardware schedule. Key cabinet is to be properly secured to a wall in a location to be determined by the Board.

.5 Key Material: Provide manufacturer's standard embossed keys of nickel silver to ensure durability. Key Quantity: Furnish keys in the following quantities:

.1	6 each	Master keys per master group.
.2	3 each	Change keys per cylinder or keyed alike
.3	3 each	group. Extractor tools
.4	6 each MKAA	weatherproof exterior grade padlocks keyed to

PART 3:

PART 4: EXECUTION

4.1 EXAMINATION

.1 Ensure that doors and frames are properly prepared and reinforced to receive finish hardware prior to installation.

.2 Ensure that door frames and finished floor are sufficiently plumb and level to permit proper engagement and operation of hardware.

.3 Submit in writing a list of deficiencies determined as part of inspection required in 3.1.1 and 3.1.2 to Consultant prior to installation of finished hardware.

4.2 INSTALLATION

.1 All installation is to be executed by employees of the Hardware Supplier whom shall have a minimum of five (5) years experience in the installation of finishing hardware. Provide verification of the installer's qualifications to the Consultant for approval. All installers are to attend review meetings with the hardware manufacturers, distributors and supplier. Installation by the General Contractor's own forces or sub-contracting for the installation of finishing hardware is not permitted.

.2 Install hardware at mounting heights as specified in the manufacturers' templates or specific references in approved hardware schedule or approved elevation drawings.

.3 Where mounting height is not otherwise specified, install hardware at mounting heights as indicated in 1.5.1, 1.5.2.

.4 Install hardware using only manufacturer supplied and approved fasteners in strict adherence with manufacturers published installation instructions.

.5 Ensure that all locksets / latchsets / deadlocks are of the correct hand before installation to ensure that the cylinder is in the correct position. Handing is part of installation procedure.

.6 Ensure that all exit devices are of the correct hand and adjust device cam for proper outside trim function prior to installation. Handing is part of installation procedure.

.7 Follow all manufactures installation instructions. Adjustment is inclusive of spring power, closing speed, latching speed and back-check at the time of installation.

.8 Delayed action door closers are to be adjusted to forty (40) second delay for handicapped accessibility and movement of materials. Time period to be approved by Owner.

.9 Install head seal prior to installation of “PA”-parallel arm mounted door closers and push side mounted door stops/holders.

.10 Counter sink through bolt of door pull under push plate during installation.

.11 Mount all closers, automatic operators and hold-open devices with through bolts, as indicated in the finish hardware schedule.

4.3 FIELD QUALITY CONTROL

.1 Perform bi-monthly on-site inspections during hardware installation and provide inspection reports listing progress of work, unacceptable work and corrective measures. Repair or replace as directed by the Consultant.

.2 Upon completion of finish hardware installation, the Consultant, manufacturer, hardware distributor, installer, and General Contractor shall do a thorough “ walk through” of the project to determine that all finishing hardware are; 1) furnished and installed in compliance with the specification, 2) final installation, adjustment, and correct applications are acceptable to the owner. In the event the Consultant rejects any product or installation, the hardware distributor shall correct the condition at no expense to the Owner, until the Consultant gives final acceptance. The hardware distributor and the Contractor shall record and provide a list of all hardware deficiencies. The manufacturer shall re-inspect when notified as to the clearing of deficiencies. The hardware distributor and the general contractor shall certify in writing that all hardware items and their installation are in accord with requirements of specification. Final inspection must ensure all hardware items operate as per manufacturer’s requirements. Coordinate final inspections with the manufacturer’s representatives as required to establish warranties. Submit report to the consultant and owner.

4.4 ADJUSTING AND CLEANING

.1 Check and make final adjustments to each operating item of hardware on each door to ensure proper operation and function.

.2 All hardware to be left clean and free of disfigurements.

.3 Instruct Owner personnel in the proper operation, adjustment and maintenance of hardware.

.4 Check all locked doors against approved keying schedule.

4.5 PROTECTION

.1 Protect hardware from damage during construction period by removing and reinstalling or where necessary, using temporary hardware to maintain finish in new condition and maintain manufacturer’s warranty.

END OF SECTION

1 General

1.1 **SECTION INCLUDES**

.1 Labour, Products, equipment and services necessary for resilient tile flooring Work and accessories in accordance with the Contract Documents.

1.2 **REFERENCES**

.1 ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

.2 ASTM F1066, Specification for Vinyl Composition Floor Tile.

.3 ASTM F1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Cloride.

.4 ASTM F 2170, Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes.

1.3 **SUBMITTALS**

.1 Product data:
.1 Submit copies of manufacturer's Product data in accordance with Section 01 30 00 indicating:
.1 Performance criteria, compliance with appropriate reference standard, characteristics, limitations.
.2 Product transportation, storage, handling and installation requirements.

.2 Samples:
.1 Submit following samples in accordance with Section 01 30 00:
.1 Two 250 x 200 mm samples of each type of tile material and colour.
.2 Two 250 mm long samples of each accessory and colour.

.3 Closeout submittals: Submit maintenance and cleaning data for incorporation into Operations and Maintenance Manuals in accordance with Section 01 78 00.

1.4 **SITE CONDITIONS**

.1 Maintain air temperature and structural base temperature at flooring installation area above 20°C for 48 hr before, during and 48 hr after installation.

.2 Store materials for 2 days prior to installation in area of Work to achieve temperature stability.

.3 Do not lay flooring in conditions of high humidity or where exposed to cold drafts. In hot weather, protect from direct sunlight.

.4 Provide adequate ventilation during installation.

.5 Ensure concrete floors meet the minimum requirements of the flooring manufacturer. Do not proceed with placement of the adhesive and resilient flooring until surfaces and conditions comply with the manufacturers requirements indicated in each of the manufacturers' instructions and good work practices. Adhesive and Resilient Flooring Manufacturers to provide their acceptance in writing to Contractor, Consultant, and Owner that the conditions are acceptable for installation.

1.5 **MAINTENANCE**

.1 Submit extra 5% or to nearest full carton of each colour, pattern and type of flooring material required for maintenance use. Identify each carton. Store where directed.

2 Products

2.1 **MATERIALS**

.1 All materials under Work of this Section, including but not limited to, primers, adhesives, sealers, and waxes are to have low VOC content limits.

.2 Luxury Vinyl Tile (LVT):

Supplier: Polyflor Canada Inc.
Product: Expona Commercial PUR
Flooring Colour: #4082 Grey Limited Oak
Size: 203mm x 1219mm
Contact Information: Aimee Miceli
Product Consultant
Cell: 647-965-7659

OR

Approved Equal

.3 Reducing edge strips, transition strips, thresholds, etc.: Nitrile rubber plasticized vinyl, 80-95 Shore A Durometer, adhesive recommended by flooring manufacturer.

.1 'Finishing Accessories' Johnsonite or approved alternative.

.4 Primers and adhesives: Low VOC, waterproof, recommended by flooring manufacturer for specific material on applicable substrate, above, at or below grade.

.5 Concrete skim coat compound: High-performance, rapid-setting cement based skim coating compound. 'Ultra SkimCoat' by Mapei or approved alternative for filling minor voids and leveling existing substrate.

3 Execution

3.1 **EXAMINATION**

.1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of Work means acceptance of existing conditions.

.2 Ensure concrete floors meet the following minimum requirements and requirements of the flooring manufacturer. If there is a conflict between these requirements and those of the flooring manufacturer, the more stringent shall apply.

.1 Internal Relative Humidity Test: Perform internal relative humidity testing in accordance with ASTM F2170. Results shall not exceed 80% RH.

.2 Moisture Test: Moisture emissions from concrete subfloors (cured for a minimum of 28 days) must not exceed 3 lbs per 1000sf per 24 hours (1.4 kg H2O/24 hr/93 m2) for acrylic adhesive and 5lbs for polyurethane adhesive via the Calcium Chloride Test Method (ASTM F1869).

.3 The pH level of the subfloor surface shall not be higher than 9.9. If higher, subfloor must be neutralized.

.3 Ensure that sub-floors have been provided as specified without holes, protrusions, cracks, depressions or other major defects.

.4 Ensure that control joints have been filled and levelled.

.5 Defective Work resulting from application to unsatisfactory surfaces will be considered the responsibility of those performing the Work of this Section.

3.2 **SUBFLOOR TREATMENT**

.1 Flooring shall be installed over subfloors conforming to ASTM F710 for concrete.

.2 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.

.3 Apply sub-floor filler to low spots and cracks to achieve floor level to a tolerance of 1:1000, allow to cure.

.4 Sub-floor shall be feathered up to meet adjacent floor finishes to ensure a smooth, flush transition.

.5 Meet ASTM F710 Standard for Concrete or other monolithic floors.

.6 Clean and remove all deleterious materials from surfaces to receive this Work in accordance with the adhesive manufacturer's recommendations.

.7 Prime concrete to flooring manufacturer's printed instructions.

3.3 **TILE APPLICATION**

.1 Install resilient tile flooring in accordance with manufacturer’s written instructions.

.2 Install flooring wall to wall before installation of floor-set cabinets, casework, furniture, equipment, etc. Extend flooring into toe spaces, door recesses, closets and similar openings.

.3 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions. Do not spread more adhesive that can be covered by flooring before initial set takes place.

.4 Make tile joints flush, uniform, in moderate contact, in straight lines and as inconspicuous as possible. Lay tile patterns of adjacent tiles parallel to each other. In general, grain pattern and continuous joints will run in one direction of room, staggered joints will run in opposite direction. Verify with Consultant on site which way grain pattern and joints will run in each room.

.5 As installation progresses, and after installation, roll flooring in 2 directions with minimum 45 kg minimum roller to ensure full adhesion.

.6 Remove adhesive seepage at seams or surface while adhesive is still wet, in accordance with manufacturer's recommendation.

.7 Cut tile and fit neatly around fixed objects.

.8 Install feature strips and floor markings where indicated. Fit joints tightly.

.9 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.

.10 Install resilient tactile warning edge in accordance with manufacturer’s written instructions.

.11 Install reducing edge strips at unprotected or exposed edges where flooring terminates and at edges where there are two finishes of different thicknesses.

3.4 **WARNING STRIP AND STAIR TREADS**

3.5 **ACCESSORIES AND WHEELED TRANSITION APPLICATION**

.1 Install accepted adaptors between different flooring materials in accordance with manufacturer's instructions.

.2 Ensure that adaptors have been clipped into place properly to provide a smooth, gradual transition between floors of different height.

.3 Install accessories in accordance with manufacturer's written instructions.

3.6 CLEANING

.1 Clean in accordance with manufacturer's written instructions.

.2 Damp mop entire floor area, remove dust and construction marks prior to sealing.

.3 Baseboards are not to be waxed.

.4 Finished floors to be free from streaks and embedded dirt particles.

3.7 **PROTECTION OF FINISHED WORK**

.1 Prohibit traffic on floor for 48 hours after installation.

.2 Cover polished surfaces with fibre reinforced, clean, non-staining kraft paper. Secure in position with gummed tape to prevent drifting. Remove covering when directed by Consultant.

END OF SECTION

Holy Family Catholic School - Keying Schedule						
Key Set	Millwork Number	Description: Locksets	Location 1	Location 2	Hand	Total Qty.
BB	M1	Millwork Master Key				
BB1	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 105	Teachers Closet	LHR/RHRA	1
BB1	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 122	Teachers Closet	LHR/RHRA	1
BB2	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 123	Teachers Closet	LHR/RHRA	1
BB3	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 124	Teachers Closet	LHR/RHRA	1
BB4	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 140	Teachers Closet	LHR/RHRA	1
BB5	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 141	Teachers Closet	LHR/RHRA	1
BB6	M1	ALX70 P6 -SAT x 10-013 626 - D145 CMK GMK	Classroom 142	Teachers Closet	LHR/RHRA	1

DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT

P00821-Carpet and Tile Flooring Removal Project
Holy Family Catholic Elementary School
180 King Street East
Alliston, Ontario

Prepared for:

Paul Gignac
Capital Projects Officer

Simcoe Muskoka Catholic District School Board
49 Alliance Boulevard
Barrie, Ontario
L4M 5K3

Prepared by:
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Safetech Project Number: 4-4260017

Date of Site Work: January 28, 2026

Date of Issue: February 3, 2026

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EXECUTIVE SUMMARY

Safetech Environmental Limited (Safetech) was commissioned by Simcoe Muskoka Catholic District School Board to conduct a designated substances and hazardous materials assessment at Holy Family Catholic Elementary School located at 180 King Street East Alliston, Ontario.

The objective of the assessment was to determine the presence, location, condition and quantities of designated substances and other hazardous materials that have the potential to be disturbed as part of planned construction activities (i.e. P00821-Carpet and Tile Flooring Removal Project) so that appropriate control measures can be implemented to protect workers during the work.

A summary of the assessment results and general recommendations based on our findings are provided in the following table. This table should be considered a summary only. Please refer to the Results (Section 2.0), Conclusions and Recommendations (Section 3.0) and Summary of ACM Occurrences (Appendix A) of our report for additional details.

Table 1: Summary of Hazardous Materials and Designated Substances

Designated Substance	Findings	Recommendations
Asbestos	The following asbestos-containing materials were identified and sampled from the areas assessed that would be impacted during the proposed project. - None Detected The following presumed asbestos-containing materials were identified from the areas assessed that would be impacted during the proposed project. - None Identified	No action required.
Lead	Beige drywall and block wall surface coatings were found to be non-lead-containing paints (<0.0064% lead content).	Disturbance of lead-containing materials must be conducted in accordance with the Ontario Ministry of Labour, Immigration, Training and

	The following materials are assumed to be lead-containing: - paints and surface coatings (not sampled) - glazing associated with ceramic tiles - solder in electrical components	Skills Development (MLITSD) *Lead on Construction Projects* guideline (2011) and/or the Environmental Abatement Council of Canada (EACC) *Lead Guideline* (October 2014). For additional details, refer to Section 3.1.2 (Conclusions and Recommendations). Lead-containing wastes should be recycled if practicable or handled and disposed of according to R.R.O. 1990, Regulation 347, *General- Waste Management.*
Mercury	Sources of mercury were observed in the subject area and include the following: - vapour in fluorescent lamps - mechanical thermostat control panel(s)	Mercury-containing equipment is not expected to be impacted during the construction project.
Silica	Building materials identified that are suspected to contain crystalline silica and may be disturbed as part of the planned construction project include: - concrete - mortar - grout - thinset	Any work involving the disturbance of silica-containing materials should follow the procedures outlined in the Ontario MLITSD *"Silica on Construction Projects"* guideline. For additional information, refer to Section 2.1.4 (Results) and Section 3.1.4 (Conclusions and Recommendations).
Other Designated Substances	No other designated substances are expected to be present in any significant quantities or in a form that would represent an exposure concern.	No protective measures or procedures specific to acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride are considered necessary.
Other Hazardous Materials	**Findings**	**Recommendations**
Urea Formaldehyde Foam Insulation	No UFFI was identified or is suspected in the subject area.	No action required.
Mould Contamination	No suspect mould contamination was observed on building finishes in the subject area.	No action required.
Pest Infestation	No pest infestations were observed in the areas assessed.	No action required.
Polychlorinated Biphenyls	No equipment was observed that is suspected to contain PCBs.	No action required.
Ozone Depleting and Global Warming Substances	No equipment was observed that is suspected to contain ozone depleting and/or global warming substances	No action required.

This assessment satisfies the Owner's requirements under Section 30 of the Ontario Occupational Health and Safety Act (OHSA), Revised Statutes of Ontario 1990, as amended.

Should you have any questions regarding the information contained in the report, please contact our office.

Safetech Environmental Limited

Luke Guldemeester, BA, WRT
Sr. OH&S Technician

Larry Ramtahal, CIH, ROH, CRSP
Sr. Occupational Hygienist

February 3, 2026

Simcoe Muskoka Catholic District School Board
49 Alliance Boulevard
Barrie, Ontario
L4M 5K3

Attention: Paul Gignac
Capital Projects Officer

RE: Designated Substances and Hazardous Materials Assessment
P00821-Carpet and Tile Flooring Removal Project
Holy Family Catholic Elementary School
180 King Street East, Alliston, Ontario

1.0 INTRODUCTION

1.1 Background and Objectives

Safetech Environmental Limited (Safetech) was commissioned by Simcoe Muskoka Catholic District School Board to conduct a designated substances and hazardous materials assessment at Holy Family Catholic Elementary School located at 180 King Street East, Alliston, Ontario (subject area). The objective of the assessment was to determine the presence, location, condition and quantities of designated substances and other hazardous materials in the subject area that have the potential to be disturbed as part of planned construction activities (i.e. P00821-Carpet and Tile Flooring Removal Project) so that appropriate control measures can be implemented to protect workers during the work.

This assessment satisfies the Owner's requirements under Section 30 of the Ontario Occupational Health and Safety Act (OHSA), Revised Statutes of Ontario 1990, as amended. Section 30(1) requires a building owner to determine if there are any designated substances present at a project site prior to construction or demolition activities. Sections 30(2), (3) and (4) require the Owner and constructors for a project to provide the findings in this report as part of the tendering information for any tendered project or to prospective contractors (and subcontractors) of a project before entering into a binding contract.

This report documents findings of our on-site inspection that was conducted on January 28, 2026 and provides conclusions and recommendations based on our findings and knowledge of the planned construction project.

1.2 Scope of Work

In accordance with our fee proposal document, our scope of work included the following activities:

- A review of existing documents, including renovation documents and drawings, floor plans and existing environmental assessment reports, etc., where available;
- A visual assessment of accessible area(s) in the subject area to identify the presence, location, condition and quantities of designated substances and other hazardous materials;
- Collection, analysis and interpretation of representative bulk samples of suspect asbestos-containing building materials for the determination of asbestos content and material classification;
- Collection, analysis and interpretation of representative paint chip samples for the determination of lead content; and
- Preparation of a report to document findings and provide recommendations regarding control measures and/or special handling procedures for designated substances or specific hazardous materials that may be disturbed as part of planned construction activities.

Documents reviewed to aid in the assessment included the following:

- *Location ID drawing "Simcoe Muskoka Catholic District School Board, Holy Family Catholic School, First Floor Plans Architectural" Dated January 2022.*
- *"Asbestos-Containing Materials (ACM) Assessment Report, Holy Family Catholic Elementary School, 180 King Street South, Alliston, Ontario"* Prepared by Safetech Environmental Ltd, dated February 2026.

This assessment only identified designated substances and hazardous materials that were deemed to be part of the building or somehow otherwise incorporated into the building structure and its finishes. **The following items were not included in our scope of work:**

- Assessing occupant items such as stored products, furnishings, items and materials used or produced as part of a manufacturing process;
- Investigating underground materials or equipment (vessels, drums, underground storage tanks, duct-banks, pipes, or cables);
- Assessing enclosed wall or ceiling cavities; and
- Assessing risers, pipe chases or elevator shafts.

1.3 Description of Area(s) Assessed

The area(s) investigated included all accessible locations of the subject area that will be impacted by the new two-storey addition. The year of construction is believed to be circa 2000's. The areas investigated are further illustrated in Appendix D: Drawing.

2.0 RESULTS

Results of our visual assessment and bulk sample analytical findings are summarized in the sections below.

2.1 Designated Substances

2.1.1 Asbestos

Results of bulk sample analysis for the determination of asbestos content are summarized in the following table. Materials have been classified as "ACM", "Non-ACM", "Suspected ACM" or "Presumed Non-ACM" based on analytical results. Materials classified as Suspected ACM or Presumed Non-ACM may require further analysis (depending on site-specific conditions) to verify whether the material should be classified as ACM or Non-ACM. Please refer to the Limitations section of this report (Section 4.0) for additional details. The Laboratory Certificate of Analysis is included in Appendix B.

Table 2*:* Bulk Sample Analytical Results for Determination of Asbestos Content

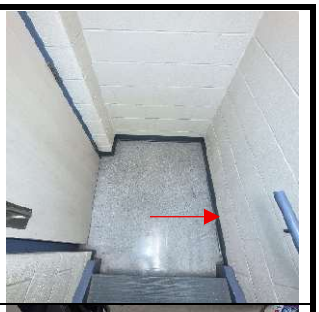
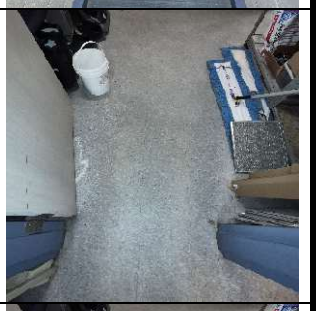
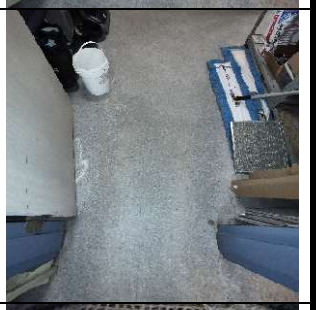
Sample No.	Material Description	Sample Location	Asbestos Content	Material Classification
S01A	Yellow – Carpet Mastic	Room 141	None Detected	**Non-ACM**
S01B		Room 123	None Detected	**Non-ACM**
S01C		Room 122	None Detected	**Non-ACM**
S01D		Room 143	None Detected	**Non-ACM**
S01E		Room 121	None Detected	**Non-ACM**
S01F		Room 101	None Detected	**Non-ACM**
S01G		Room 101C	None Detected	**Non-ACM**
S02A	Mastic Associated w/ 12x12 Blue Vinyl Floor Tile	Room 143A	None Detected	**Non-ACM**
S02B				
S02C				
S03A	Baseboard Mastic	Room 143A	None Detected	**Non-ACM**
S03B				
S03C				

Materials assessed for asbestos content are summarized in the following table based on the type/use of the material.

Table 3: Results of Assessment for Asbestos-Containing Materials

Sprayed and Loose Fill Insulating Materials	Location/Description

Sprayed Fireproofing	None identified in subject area.
Sprayed Insulation	None identified in subject area.
Loose Fill / Vermiculite Insulation	None identified in subject building. Interior and exterior portions of concrete block walls could not be assessed. However, it is not expected that these walls are insulated with loose fill or vermiculite insulation due to the age of construction of the subject structure.
Thermal System Insulation	**Location/Description**
Mechanical Pipe Insulation – Straights	None identified in subject area.
HVAC Duct Insulation	None identified in subject area.
Window Glazing	None identified in subject area.
Casement Caulking	None identified in subject area.
Other Mechanical Equipment Insulation	None identified in subject area.
Architectural Finishes & Finishing Materials	**Location/Description**
Sprayed Texture / Stucco Finishes	None identified in subject area.
Red Firestop	None identified in subject area.
Plaster Finishes	None identified in subject area.
Drywall Joint Compound	None identified in subject area.
Ceiling Tiles	**Location/Description**
Lay-in Acoustic Ceiling Tiles	None identified in subject area.
Glued-on Acoustic Ceiling Tiles	None identified in subject area.
Cement Ceiling Panels	None identified in subject area.
Flooring	**Location/Description**

Vinyl baseboard & associated Mastic	Vinyl baseboard and associated mastic was observed in the subject area. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set S03 in Table 2.	
12”x12” Vinyl Floor Tiles	Blue w/ light blue streak 12x12 vinyl floor tile was previously sampled by Safetech and determined to be non-ACM. See section 1.2 for further details.	
Mastic Associated w/ 12”x12” Vinyl Floor Tiles	Vinyl floor tiles were observed in the subject area. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set S02 in Table 2.	
Carpet Mastic	Yellow carpet mastic was observed in the subject area. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set S02 in Table 2.	
Vinyl Sheet Flooring	Blue vinyl sheet flooring (*as flooring transition or remaining*) previously sampled by Safetech and determined to be non-ACM. See section 1.2 for further details.	
Asbestos Cement Products	**Location/Description**	
Roofing, Siding, Wallboard	None identified in subject area.	

Parging Cement	None identified in subject area.
Ceramic Tile Grout	None identified in subject area.
None identified in subject area.	None identified in subject area.
Stone Mortar (Exterior)	None identified in subject area.
Block Mortar (Interior and exterior)	None identified in subject area.
Exterior Building Materials	**Location/Description**
Roofing Membrane	None identified in subject area.
Shingles	None identified in subject area.
Roof caulking	None identified in subject area.

2.1.2 Lead

Laboratory analytical results for paints tested to determine lead content are summarized in the following table. The Laboratory Certificate of Analysis is included in Appendix C. Refer to Section 3.1.2 of this report for recommended lead abatement procedures (if any) that correspond to the type of proposed construction, renovation, or demolition work.

Table 4: Results of Paint Condition and Lead Content Assessment

Sample No.	Location	Surface	Paint Colour	Condition	Lead Conc. (% by wt.)	Material Classification
LP1	Room 121	Block Wall	Beige	Good	0.0064%	**NLC**

Lead-Containing Material: ≥ 0.1% Lead Content
Low-Level Lead-Containing Materials: 0.009 to 0.1% Lead Content
Not Lead-Containing: <0.009% Lead Content

Suspect lead-containing materials observed in the subject area included the following:

- paints and surface coatings (not sampled)
- glazing associated with ceramic tiles
- solder in electrical components

2.1.3 Mercury

Mercury is present in the subject area in the form of:

- vapour in fluorescent lamps
- mechanical thermostat control panel(s)

2.1.4 Silica

A number of building materials were identified in the subject area that are ***suspected to contain crystalline silica***. This includes the following materials:

- concrete
- mortar
- grout
- thinset

2.1.5 Other Designated Substances

Acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride were not included in the assessment as these substances are not expected to be a significant component of building materials or present in a form that would represent an exposure concern. Additionally, no specific information regarding their use was provided to us.

2.2 Other Hazardous Materials

2.2.1 Chemical Hazards

No visible evidence of UFFI installation (i.e. injection openings) or overspray of foam insulation at wall/ceiling joints was identified in the subject area.

2.2.2 Biological Hazards

2.2.2.1 Mould Contamination

There was no visible evidence of obvious mould growth on building finishes in the subject area at the time of the assessment. In addition, there was no visible evidence of any significant water staining or discolouration to building finishes in the subject area that would suggest the potential for hidden mould growth behind these finishes.

2.2.2.2 Pest Infestation

There was no visible evidence of a pest infestation in the subject area.

2.2.3 Environmental Hazards

2.2.3.1 Polychlorinated Biphenyls (PCBs)

No sources of polychlorinated biphenyls (PCBs) were observed in the subject area.

2.2.3.2 Ozone Depleting and Global Warming Substances

No fixed equipment suspected to contain ODS/GWS was observed in the subject area.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Designated Substances

3.1.1 Asbestos

As results summarized in Table 2 indicate, **no asbestos** was detected in any of the bulk samples of carpet mastic, vinyl floor mastic, or baseboard mastic retrieved for analysis. Therefore, these building materials are considered to be Non-ACM and there are no requirements for management, disturbance or removal of these materials under O. Reg. 278/05. No other suspect asbestos-containing materials were observed in the subject area.

3.1.2 Lead

Beige interior block and drywall walls were found to be non-lead-containing paints (<0.010% lead content). Blue surface coatings associated with exit door frames were found to be non-lead-containing paints (<0.0064% lead content). As such these surface coatings require no additional measures for physical manipulation.

Paints and surface coatings not sampled are assumed to be lead-containing (>0.1% lead content) in the subject area.

Any disturbance of the lead-containing paints or surface coatings should be conducted in accordance with the procedures outlined in the Environmental Abatement Council of Canada (EACC) “Lead Guideline” (October 2014) and/or the Ontario Ministry of Labour, Training and Skills Development (MLTSD) “Lead on Construction Projects” guideline (April 2011). The extent of procedures required depends on the type of work to be conducted.

3.1.3 Mercury

Fluorescent lamps that require removal should be handled with care and kept intact to avoid potential exposure to mercury vapour present within the lamps. Under Reg. 347, waste mercury produced in amounts less than 5 kilograms (kg) in any month or otherwise accumulated in an amount less than 5 kg are exempt from hazardous waste registration, treatment and disposal requirements and can be disposed of in landfill as regular waste. Larger quantities of waste mercury must be treated and disposed of in accordance with the requirements of Reg. 347. Although it is anticipated that less than 5 kg of waste lamps

will be produced as part of the P00821-Carpet and Tile Flooring Removal Project, to prevent the release of mercury into the environment, Safetech recommends that all waste lamps be sent to a lamp recycling facility and not disposed of in landfill.

Although no mercury was visibly identified in other equipment, dismantling of equipment was not conducted to verify the presence/absence of mercury. It is cautioned that thermometers, barometers and other measuring devices (pressure gauges/sensors, vacuum gauges, manometers, etc.), thermostats and a variety of other electrical switches (temperature sensitive, tilt switches, float switches, etc.) may contain mercury that may not be visible without dismantling the equipment. Such devices should be assumed to contain mercury until proven otherwise and similar precautions to those outlined above should be taken if any of these items are to be disturbed or taken out of service in the future.

3.1.4 Silica

Suspect silica-containing materials were identified to be present in the subject area. In their current state, building materials containing silica do not represent a risk to building occupants or construction workers. Risks associated with exposure to silica arise during demolition activities that cause silica dust to be created (particularly grinding, drilling or cutting operations and during major demolition), resulting in a crystalline silica inhalation hazard.

If any materials suspected to contain silica are to be removed or otherwise disturbed as a result of renovation/demolition activities it is recommended that procedures be put in place to control the generation of dust (such as routine water misting) and thus reduce the potential for worker exposure. Workers that have the potential to be exposed to airborne silica should also wear appropriate protective clothing and respiratory protection. Any work involving the disturbance of silica-containing materials should follow the procedures outlined in the Ontario MLITSD “Silica on Construction Projects” guideline (April 2011). The appropriate engineering controls, work practices, hygiene practices, personal protective measures and training necessary to conduct the work in a safe manner are provided in this guideline. The general measures and procedures (or Type of operation) necessary depends on the type of work to be conducted. The following table outlines the classification of silica disturbance based on the Ontario MLITSD guideline.

Operation	Description
Type 1	1. The drilling of holes in concrete or rock that is not part of a tunneling operation or road construction. 2. Milling of asphalt from concrete highway pavement 3. Charging mixers and hoppers with silica sand (sand consisting of at least 95% silica) or silica flour (finely ground sand consisting of at least 95% silica) 4. Any other operation at a project that requires the handling of silica-containing material in a way that may results in a worker being exposed to airborne silica. 5. Entry into a dry mortar removal or abrasive blasting area while airborne dust is visible for less than 15 minutes for inspection and/or sampling. 6. Working within 25 metres of an area where compressed air is being used to remove silica-containing dust outdoors.

Operation	Description
Type 2	1. Removal of silica containing refractory materials with a jackhammer 2. The drilling of holes in concrete or rock that is part of a tunneling or road construction. 3. The use of a power tool to cut, grind, or polish concrete, masonry, terrazzo or refractory materials. 4. The use of a power tool to remove silica containing materials. 5. Tunneling (operation of the tunnel boring machine, tunnel drilling, and tunnel mesh installation). 6. Tuckpoint and surface grinding 7. Dry mortar removal with an electric or pneumatic cutting device 8. Dry method dust cleanup from abrasive blasting operations 9. The use of compress air outdoors for removing silica dust 10. Entry into area where abrasive blasting is being carried out for more than 15 minutes
Type 3	1. Abrasive blasting with an abrasive that contains >1% silica 2. Abrasive blasting or a material that contains >1% silica

3.1.5 Other Designated Substances

No other designated substances are expected to be a component of building materials in the subject area in a form that would represent an exposure concern. Therefore, no protective measures or procedures specific to acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride are considered necessary.

3.2 Other Hazardous Materials

3.2.1 Chemical Hazards

As no UFFI was identified or is suspected to be present in the subject area, no further action is required. However, given that no destructive testing was conducted, there is a remote possibility that UFFI could be hidden within locations such as exterior wall cavities. If suspect foam insulation is identified during renovation/demolition activities work should be stopped and the area should be re-assessed to evaluate conditions and determine appropriate control measures and worker protection, if necessary.

3.2.2 Biological Hazards

3.2.2.1 Mould Contamination

No mould contamination was identified in the subject area and no further action is required at this time. Although no obvious mould contamination or evidence to suggest possible hidden mould contamination was identified in the subject area, there is still a potential for hidden mould growth to exist behind or underneath building finishes. Should suspect mould growth be discovered during the course of renovation or demolition work, Safetech recommends that all work stop so that the area can be assessed to evaluate proper control measures and remediation protocols in order to avoid worker exposure to mould and possible contamination of adjacent areas.

3.2.2.2 Pest Infestation

No visual evidence of any significant pest infestation was observed in the subject area. Therefore, no additional precautionary measures are deemed necessary for protection against biological contaminants potentially associated with pest infestation.

3.2.3 Environmental Hazards

3.2.3.1 Polychlorinated Biphenyls (PCBs)

Given that the building is known to be constructed after 1980, no light fixtures are expected to have PCB-containing ballasts as the manufacture of PCBs in the U.S. was banned in 1979 and Canada banned the import, manufacture and sale of PCBs in 1977. Similarly, no other electrical equipment (such as transformers and capacitors) present in the subject area(s) is expected to contain PCBs based on the age of building construction.

3.2.3.2 Ozone Depleting and Global Warming Substances

No equipment was identified in the subject area that is expected to contain ozone depleting or global warming substances. As such, no recommendations are considered necessary at this time.

4.0 LIMITATIONS

The information and recommendations detailed in this report were carried out by trained professional and technical staff in accordance with generally accepted environmental and industrial hygiene work practices and procedures. Recommendations provided in this report have been generated in accordance with accepted industry guidelines and practices. These guidelines and practices are considered acceptable as of the date of this report.

In preparation of this report, Safetech relied on information supplied by others, including without limitation, information pertaining to the history and operation of the site, test results and reports of other consultants and testing services provided by independent laboratories. Except as expressly set out in this report, Safetech has not made any independent verification of information provided by independent entities.

The collection of samples at the location noted was consistent with the scope of work agreed-upon with the person or entity to whom this report is addressed and the information obtained concerning prior site investigations. As conditions between samples may vary, the potential remains for the presence of unknown additional contaminants for which there were no known indicators.

The analytical method used for determination of asbestos content meets the requirements of O. Reg. 278/05. However, small asbestos fibres may be missed by PLM due to resolution limitations of the optical microscope. Interfering binder/matrix and/or low asbestos content may also hinder positive identification by PLM. These conditions are

common for vermiculite attic insulation (VAI) and non-friable organically bound (NOB) materials such as vinyl floor tiles, roofing materials, mastics and caulking and can lead to “false negative” results. If PLM analytical results for these types of materials indicate no asbestos detected they have been reported as “Presumed Non-ACM”. Due to limitations of the analytical method we cannot confirm that low quantities of asbestos are not present in these samples using solely PLM analysis. Additional analytical procedures should be considered for such materials to rule out false negative results.

Conclusions are based on site conditions at the time of inspection and can only be extrapolated to an undefined limited area around inspected locations. The extent of the limited area depends on building construction and conditions. Building materials that are not detailed within this survey due to inaccessibility during the time of survey and/or are uncovered during renovation/demolition activities should be properly assessed by a qualified person prior to their disturbance. Safetech cannot warrant against undiscovered environmental liabilities. If any information becomes available that differs from the findings in this report, we request that we be notified immediately to reassess the conclusions provided herein.

No other person or entity is entitled to use or rely upon this report without the express written consent of Safetech and the person or entity to who it is addressed. Any use that a third party makes of this report, or any reliance based on conclusions and recommendations made, are the responsibility of such third parties. Safetech accepts no responsibility for damages suffered by third parties as a result of actions based on this report.

Appendix A: Summary of ACM Occurrences

Floor	Location	System	Material	Description	Classification	Friable/Non-Friable	Condition	Est. Quantity	Unit	Access	Action

None Identified Within The Project Area

Appendix B: Laboratory Certificate of Analysis – Asbestos

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552601678
Customer ID: 55SELI62
Customer PO: 4-4260017
Project ID:

Attn: Luke Guldemeester
Safetech Environmental Limited
3045 Southcreek Road
Unit 14
Mississauga, ON L4X 2X7

Phone: (905) 624-2722
Fax: (905) 624-4306
Collected: 1/28/2026
Received: 1/30/2026
Analyzed: 2/02/2026

Proj: 4-4260017 / Holy Family, Alliston

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: S01A **Lab Sample ID:** **552601678-0001**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 141

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	White/Yellow	0.0%	100.0%	None Detected	

Client Sample ID: S01B **Lab Sample ID:** **552601678-0002**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 123

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: S01C **Lab Sample ID:** **552601678-0003**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 122

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: S01D **Lab Sample ID:** **552601678-0004**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 143

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Gray/White/Yellow	0.0%	100.0%	None Detected	

Client Sample ID: S01E **Lab Sample ID:** **552601678-0005**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 121

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: S01F **Lab Sample ID:** **552601678-0006**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 101

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: S01G **Lab Sample ID:** **552601678-0007**
Sample Description: Blue-Grey Broadloom Carpet Mastic- Yellow/ Room 101C

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Yellow	0.0%	100.0%	None Detected	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 552601678
Customer ID: 55SELI62
Customer PO: 4-4260017
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: S02A ***Lab Sample ID:*** **552601678-0008**

Sample Description: 12x12 Blue w/ White Speck Vinyl Floor Tile Associated Mastic/ Room 143A

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Black	0.0%	100.0%	None Detected	

Client Sample ID: S02B ***Lab Sample ID:*** **552601678-0009**

Sample Description: 12x12 Blue w/ White Speck Vinyl Floor Tile Associated Mastic/ Room 143A

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Black	0.0%	100.0%	None Detected	

Client Sample ID: S02C ***Lab Sample ID:*** **552601678-0010**

Sample Description: 12x12 Blue w/ White Speck Vinyl Floor Tile Associated Mastic/ Room 143A

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Black	0.0%	100.0%	None Detected	

Client Sample ID: S03A ***Lab Sample ID:*** **552601678-0011**

Sample Description: Blue Baseboard Mastic/ General Office

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Beige	0.0%	100.0%	None Detected	

Client Sample ID: S03B ***Lab Sample ID:*** **552601678-0012**

Sample Description: Blue Baseboard Mastic/ Room 143A

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Beige	0.0%	100.0%	None Detected	

Client Sample ID: S03C ***Lab Sample ID:*** **552601678-0013**

Sample Description: Blue Baseboard Mastic/ Room 143A

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/02/2026	Beige	0.0%	100.0%	None Detected	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

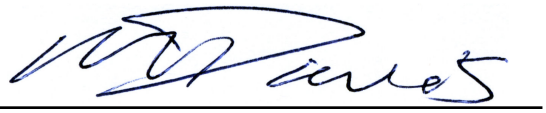
EMSL Canada Order 552601678
Customer ID: 55SELI62
Customer PO: 4-4260017
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Analyst(s):

Nickesh Mistry	PLM (5)
Vanessa Gallego	PLM (8)

Reviewed and approved by:



Matthew Davis or other approved signatory
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This is a summary report; official reports are available on LabConnect or upon request and relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Report amended: 02/03/202609:25:33 Replaces initial report from: 02/02/202619:53:36 Reason Code: Client-Change to ProjectID

Appendix C: Laboratory Certificate of Analysis – Lead

EMSL Canada Inc.
2756 Slough Street, Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com torontolab@emsl.com

EMSL Canada Or	552601685
CustomerID:	55SELI62D
CustomerPO:	4-4260017
ProjectID:	

Attn: **Luke Guldemeester**
Safetech Environmental Limited
130 Saunders Rd Unit 13
Barrie, ON L4N 9A8

Phone: (905) 624-2722
Fax:
Received: 1/30/2026 11:10 AM
Collected:

Project: **4-4260017 / Holy Family, Alliston**

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

Client SampleDescription	*Collected*	*Analyzed*	*Weight*	*RDL*	*Lead Concentration*
LP1		1/30/2026	0.2505 g	0.0064 % wt	<0.0064 % wt
552601685-0001	Site: Beige / Room 121				

Rowena Fanto, Lead Supervisor
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. * Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.0064% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

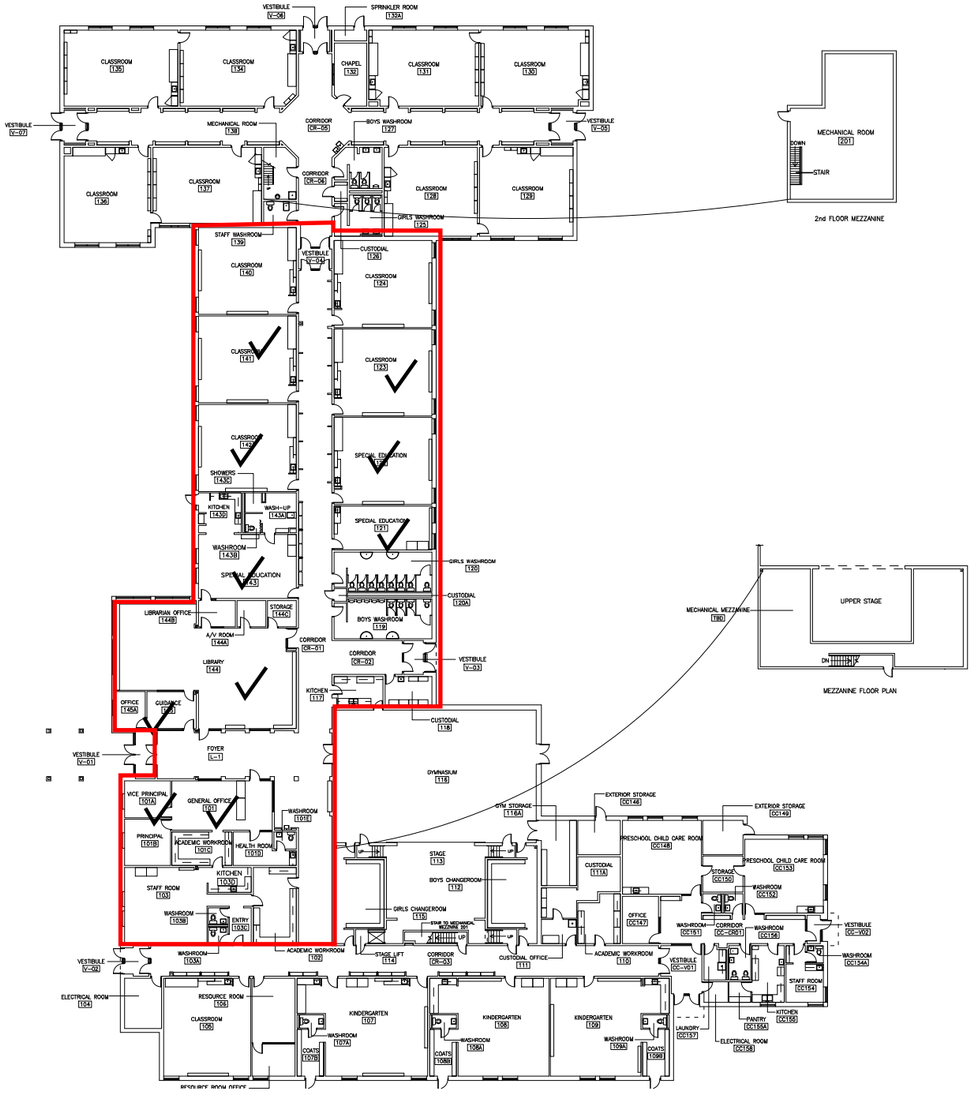
Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA LAP, LLC-ELLAP Accredited #196142

Report Amended: 02/03/2026 09:33:38 Replaces the Inital Report 02/03/2026 08:50:33. Reason Code: Client-Change to Project

Appendix D: Drawing

LEGEND

AREA(S) ASSESSED



NOTES:
i. Base drawing provided to Safetech
ii. Not to scale. For illustrative purposes only.
iii. Contractor to confirm quantities and measurements.
iv. Must be read in conjunction with report.

NOTES:
1) THIS FLOOR PLAN MUST BE READ IN CONJUNCTION WITH THE CORRESPONDING DESIGNATED SUBSTANCES SURVEY REPORT.
2) REMOVAL OR DISTURBANCE OF ANY ASBESTOS-CONTAINING BUILDING MATERIALS MUST BE CONDUCTED IN ACCORDANCE WITH ONTARIO REGULATION 278/05 "DESIGNATED SUBSTANCE - ASBESTOS ON CONSTRUCTION PROJECTS AND IN BUILDINGS AND REPAIR OPERATIONS".

GROUND

CARPET FLOORING REMOVAL

HOLY FAMILY CES
180 KING STREET EAST
ALLISTON, ON

DRAWING NO.
D-1

DATE: FEBRUARY 03, 2026

SAFETECH PROJECT NO.
4-4260017

safeTECH ENVIRONMENTAL LTD.
130 Saunders Rd.,
Suite # 13
Barrie, Ontario, L4N 9A8

Appendix E: Methodology

A. METHODOLOGY

The presence of hazardous materials was assessed by visual inspection. For the purpose of this assessment and this document, hazardous materials include designated substances as well as other chemical, biological and environmental hazards as defined below:

- Designated Substances (as prescribed by Ontario Regulation 490/09):
    - Acrylonitrile, Arsenic, Asbestos, Benzene, Coke Oven Emissions, Ethylene Oxide, Isocyanates, Lead, Mercury, Silica and Vinyl Chloride.
- Other Hazardous Materials:
    - **Chemical Hazards** – Urea Formaldehyde Foam Insulation (UFFI)
    - **Biological Hazards** – Mould Contamination and Pest Infestation
    - **Environmental Hazards** – Polychlorinated Biphenyls (PCBs) and Ozone Depleting & Global Warming Substances

Concealed locations such as above solid plaster or drywall ceilings, within plaster or drywall wall cavities, enclosed mechanical/pipe shafts and bulkheads, etc. were not investigated, unless otherwise stated in Section 1.3. Similarly, motors, blowers, electrical panels, etc., were not de-energized or disassembled to examine concealed conditions. Building materials that are not detailed within this assessment due to inaccessibility at the time of our site visit and/or uncovered during renovation/demolition activities should be assessed by a qualified person prior to their disturbance.

Bulk sampling followed by laboratory analysis was also conducted to confirm the presence/absence of select hazardous materials. Bulk sampling was limited to asbestos in building materials and lead in paint on building finishes (if flaking paint was present). All other hazardous materials were identified by visual inspection only. Where possible, observations regarding the location, quantity and condition of the hazardous materials identified were made in order to determine the potential for exposure and provide appropriate recommendations for remedial action, if necessary. Specific methodology for each individual hazardous material assessed is further detailed below.

A.1 Designated Substances

A.1.1 Asbestos

A visual inspection for the presence of both friable and non-friable asbestos-containing material (ACM) was performed in the subject area.

If an existing asbestos survey was available for review, Safetech relied on the information present. Building materials that were visually similar to materials previously tested and that were confirmed to be either ACM or non-ACM were considered to have consistent content and were not re-sampled. Additional sampling was only conducted where the investigator believed a need existed.
Bulk samples of building materials suspected to contain asbestos were retrieved by Safetech only for materials that were deemed to have a potential to be disturbed as part

of the construction project. Some suspect materials may not have been sampled during our investigation. Bulk samples were retrieved in accordance with Section 3 and Table 1 of Ontario Regulation 278/05, "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations". The number of samples collected for each material was based on the type and quantity of the material present in the subject area. Each individual sample was placed in a labeled zip-lock bag for transportation to an independent laboratory (EMSL). EMSL is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos fiber analysis.

Analysis for asbestos content was performed by the independent laboratory in accordance with the U.S. Environmental Protection Agency (EPA) Test Method *EPA/600/R-93-116: Method for the Determination of Asbestos in Bulk Building Materials (June 1993)*. This method identifies the asbestos fibre content of building materials using polarized light microscopy (PLM) analytical techniques, with confirmation of presence and type of asbestos made by dispersion staining optical microscopy. This analytical method meets the requirements set forth in Section 3 of O. Reg. 278/05.

In accordance with O. Reg. 278/05, an asbestos-containing material is defined as material that contains 0.5 per cent or more asbestos by dry weight. The laboratory was instructed to conduct "stop-positive" analysis for all materials. If a sample was found to be asbestos-containing no further analysis was conducted for samples taken from the same homogeneous material.

Locations where ACM have been identified are detailed in this report. Recommendations pertaining to ACM were made based on the friability, accessibility and condition of the material in conjunction with the potential for the planned renovation work to disturb the ACM.

A.1.2 Assessment of Asbestos-Containing Building Materials

Accessibility, Condition and Action (Priority) ratings for individual items, or defined areas were developed by Safetech to determine remedial action plans specific to the facility's needs.

A.1.2.1 Accessibility

Accessibility has been assessed as: (A) Accessible to all non-maintenance occupants of the building; (B) Accessible to maintenance staff without a ladder; (C) Accessible to maintenance staff with a ladder and exposed to view without moving a building component; (D) Accessible to maintenance staff with a ladder and concealed from view due to a building component; (E) Not accessible without demolition or removal of fixed building components or building systems

A.1.2.2 Condition

The condition of asbestos-containing materials identified in the subject area was assessed as Good (G), Fair (F) or Poor (P). The assessment criteria used to determine condition is dependent on material characteristics, such as friability. The following table summarizes the criteria used by Safetech to evaluate the condition of ACM.

Sprayed Fireproofing, Sprayed Insulation and Sprayed Texture Finishes	
Good	• Surface shows no significant signs of damage, deterioration, or delamination (i.e. <1%). • Unencapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed. • Encapsulated fireproofing or texture finishes where encapsulation applied after damage or fallout.
Fair	• Not utilized as part of condition assessment for these materials.
Poor	• Greater than 1% damage, delamination, or deterioration to surface.
In areas where damage exists in isolated locations, both Good and Poor may be applicable.	
Mechanical Insulation (boilers, breeching, ductwork, piping, tanks, equipment, etc.)	
Good	• Insulation completely covered in jacketing and exhibits no evidence of damage or deterioration. • Jacketing may have minor damage (i.e. scuffs or stains), but is not penetrated.
Fair	• Minor penetrating damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination). • Undamaged insulation that had never been jacketed. • Insulation is exposed but not showing surface disintegration. • Extent of missing insulation ranges from minor to none. • Damage that can be repaired.
Poor	• Original insulation jacket is missing, damaged, deteriorated, or delaminated. • Insulation is exposed and significant areas have been dislodged. • Damage that cannot be easily repaired.
Non-Friable and Potentially Friable Materials (includes materials such as plaster finishes, drywall compound, ceiling tiles, asbestos cement products, vinyl asbestos tile and asbestos paper backed vinyl sheet flooring, etc., which have the potential to become friable when handled)	
Good	• No significant damage. • Material may be cracked or broken but is stable and not likely to become friable upon casual contact. • No friable debris present
Fair	• Not utilized as part of condition assessment for these materials.
Poor	• Material is severely damaged. • Debris is present or binder has disintegrated to the point where the material has become friable.
Asbestos-Containing Debris (noted separately from the presumed source material)	
Poor	• Debris is always considered to be in Poor condition.

A.1.2.3 Action

Recommended ACTION for compliance and for management of identified asbestos-containing materials has been provided for each condition and component outlined in the above table. Recommendations have been classified under the following 8 ACTIONS:

1. Action dealing with the immediate clean-up of fallen ACM likely to be disturbed.

2. Action dealing with the need to use Type 2 asbestos procedures to enter an area (other than a ceiling space).
3. Action dealing with performing asbestos removal for compliance with regulations.
4. Action dealing with Type 2 asbestos procedures for ceiling entry where friable ACM debris is present on the top side of a ceiling system.
5. Action dealing with the removal of asbestos that goes beyond compliance requirements but simplifies the asbestos management.
6. Action dealing with the repair of asbestos.
7. Action dealing with ACM surveillance requirements of the regulation.
8. Action for dealing with material that may contain asbestos but was not conclusively identified in the survey.

A.1.2.4 Quantity

The approximate quantity and the units of measure related to the quantity (i.e.: linear feet (LF), square feet (SF) or each (EACH) as appropriate to the item) have only been provided for materials requiring remedial or corrective action (i.e. materials in Fair or Poor condition). In such circumstances any quantities provided should be considered rough estimates only and should not be solely relied upon for bidding purposes. It is the responsibility of the selected Contractor to obtain actual quantities.

A.2 Lead

If paint samples were collected, they would be collected by scraping the paint down to the base material substrate to ensure collection of all layers of paint. Care would be taken to avoid collection of the underlying substrate to reduce analytical substrate matrix interference.

If collected, paint samples would be submitted to an independent laboratory for the determination of lead content. The laboratory would participate in and accredited by the EPA (U.S. Environmental Protection Agency) for analysis of lead in paint chips through the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP). Analysis would be conducted by the laboratory following the EPA “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (SW-846), Method 7000B “Flame Atomic Absorption Spectrophotometry”. Result of analysis would be reported by the laboratory as the percentage of lead by weight of the total sample (% by wt.).

The presence of lead in other materials, such as lead sheeting, pigmented mortar, lead piping, lead solder, etc. would be noted where observed but not sampled to verify lead content. Lead can be present in these materials to varying degrees, depending on their age of application and should be considered lead-containing until proven otherwise.

A.3 Mercury

The type, quantity and location of mercury-containing equipment and devices in the subject area were determined by visual inspection based on appearance, age and knowledge of historical uses. Sampling for mercury-containing building materials and dismantling of suspect mercury-containing equipment was not performed. Where possible, attempts were made to verify the presence/absence of mercury by gathering additional information such as equipment model number, serial number, etc.

A.4 Silica

The presence of crystalline silica in building materials was determined through visual inspection of building materials only, based on knowledge of the historic use of silica-containing materials in certain building materials. Sampling to verify the presence/absence of silica in building materials was not performed.

A.5 Other Designated Substances

Other designated substances (i.e. acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride) are typically not expected to be encountered in building materials as significant constituents or in a form that would represent an exposure concern. These substances were not included in the assessment unless specific information regarding their use (e.g. in a manufacturing process) was provided to us. No sampling for these designated substances was performed.

A.6 Other Hazardous Materials

A.6.1 Chemical Hazards

A.6.1.1 Urea Formaldehyde Foam Insulation (UFFI)

A visual inspection to evaluate the possible presence of Urea Formaldehyde Foam Insulation (UFFI) was conducted in the subject area. Our visual inspection was limited to identifying evidence of possible UFFI installation (i.e. repaired nozzle holes in walls) and overspray at wall/ceiling joints, etc. No destructive testing or material sampling was conducted as part of the assessment.

A.7 Biological Hazards

A.7.1.1 Mould Contamination

A visual inspection to determine the possibility of mould growth was conducted in the subject area. The assessment was limited to identifying evidence of mould growth and water damage (staining, material deterioration, efflorescence, etc.) on the surface of building materials, which may be an indicator of hidden mould growth. No moisture content readings of building materials were taken to determine their current condition. Additionally, destructive testing to confirm the presence/absence of hidden mould growth and material sampling to verify the presence/absence of mould on suspect surfaces was beyond the scope of this assessment.

A.7.1.2 Pest Infestation

The presence and extent of pest infestation in the subject area was based on visually inspecting for evidence of significant pest activity, including signs of nesting, droppings/fecal accumulation, dead insects/carcass accumulation, etc. Evidence of minor pest presence was not considered to be indicative of pest infestation.

A.8 Environmental Hazards

A.8.1 Polychlorinated Biphenyls (PCBs)

The presence of PCB-containing electrical equipment in the subject area was identified through visual inspection and knowledge of the timeline of historical use.

For stand-alone transformers and capacitors, information from the manufacturer nameplate (such as the date of manufacture, dielectric fluid trade name or "Type Number", etc.) was gathered, where possible, to further evaluate if the equipment may contain PCBs. This information was then compared to the information provided in the Environment Canada document entitled "Handbook on PCB's in Electrical Equipment" (Third Edition, April 1988) to aid in identification. Transformers and capacitors confirmed to be manufactured after 1979 were assumed to not contain PCBs. If appropriate information could not be obtained it was assumed that the transformer or capacitor contained PCBs.

For fluorescent light ballasts, a representative number of fixtures were inspected, if possible, for assessment areas that were constructed prior to 1980 and where there was no history or evidence of a complete lighting retrofit. The light fixtures were examined by removing any lenses and ballast covers to expose the ballast and identify information such as ballast make, model number, serial number, and date code. This information was then compared to the information provided in the Environment Canada document entitled "Identification of Lamp Ballasts Containing PCBs" (Report EPS 2/CC/2 (revised) August 1991) to aid in identification. Ballasts that could not be confirmed Non-PCB-containing were assumed to contain PCBs. The light fixtures were not de-energized and ballasts were not removed to obtain manufacturer information that may be on the back of the ballast. If visual confirmation of ballast type could not be made it was assumed that light fixtures in areas constructed prior to 1980 that have not undergone a complete lighting retrofit have PCB-containing ballasts until proven otherwise.

No sampling of materials or fluids within equipment was conducted to verify the presence/absence of PCBs. Inspection and testing of other materials for PCB content, including (but not limited to) caulking, asphalt, oil-based paint, plastics, switches, electric cables and hydraulic fluids was beyond the scope of the assessment.

A.8.2 Ozone Depleting and Global Warming Substances

The presence of fixed equipment likely to contain ozone-depleting substances (ODS) and/or global-warming substances (GWS) was identified through visual inspection and

knowledge of the timeline of historical use. This included equipment such as chillers, air-conditioners, walk-in refrigeration and freezer units and fixed dry-chemical fire extinguishers, where chemicals such as hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs) or halons may be present. Where possible, information regarding the type and quantity of refrigerant present was obtained from the manufacturer nameplate. Our visual assessment was limited to fixed equipment in the subject area and did not include portable equipment such as stand-alone refrigerators, freezers, water coolers, air-conditioners and fire extinguishers, etc.