

# **SPECIFICATION**

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## **INTERIOR RENOVATIONS**

**FACILITY BUILDING-IQALUIT  
NUNAVUT  
PROJECT NO. 17-007-01-30**

**TENDER**

**Can-Tec Services Ltd.  
1948 MAIN STREET  
WINNIPEG, MANITOBA  
R2V 2B4  
TEL: 204-943-7222  
FAX: 204-947-5717**

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## **LIST OF DRAWINGS:**

### **Storage Room**

- A0.0 TITLE PAGE
- A1.0 KEY PLAN
- A2.0 PARTIAL MAIN FLOOR PLAN
- A2.1 INTERIOR ELEVATIONS
- A2.2 DETAILS
- A2.3 TELECOMMUNICATION REQUIREMENTS

- S1.0 STRUCTURAL

### **Sound Proofing and Storage**

- A0.0 Title Page
- A1.0 Key Plan
- A2.0 Partial Main Floor Plan
- A2.1 Partial Main Floor Plan
- A2.2 Partial Main Floor Plan

**END OF TABLE**

**Part 1            General**

**1.1                WORK COVERED BY CONTRACT DOCUMENTS**

- .1        Work of this Contract comprises the interior renovations for a storage room of The Facility Building located in Iqaluit Nunavut. The work will be done in a single phase on weekends. This work includes; labour, materials and shipping of materials, in accordance with the contract documents and as further described herein.

**1.2                SCOPE OF WORK**

- .1        Storage Room
  - .1        Existing interior door to be sealed off.
  - .2        Install new fire rated steel door into existing hallway.
  - .3        Modify hallway millwork to match interior doors.
  - .4        Relocate light switch to wall next to door
  - .5        Re-wire wall plug to generator panel
  - .6        Install new Lan Plugs in storage rooms
  - .7        Install new light emergency lights in storage rooms.
- .2        Rooms 1-159, 1-161, 1-162, 1-103 and 1-165
  - .1        Install new sound panels on walls and ceiling as per drawings
  - .2        Remove door to room 1-162 and replace with new STC 55 door in existing frame
  - .3        Install new weather stripping and drop seal on room 1-161
- .3        Install new Flooring in Room 1-120
  - .1        Remove existing flooring and any damaged sub floor
  - .2        Re-level floor
  - .3        Install new flooring
  - .4        Contractor to include the disassembly and moving of all furniture/fixtures in the office space during the

**1.3                SITE VERIFICATION**

Upon award of the contract contractor is to schedule a site trip to site verify all sizes and dimensions. No additional fees will be considered for materials brought onto site of the wrong size.

**1.4                PROJECT TIMING**

- .1        The storage room and the installation of the flooring in room 1-120 is to be done during evening or weekend hours as to not disrupt the building occupants.
- .2        The work installing the new sound panels in rooms 1-159,1-162, 1-162, 1-103 and 1-165 can be done during normal working hours.
- .3        The contractor is to co-ordinate with the RCMP detachment commander as to the exact timing of the interior renovation.

## **1.5 WORK SEQUENCE**

- .1 Building will remain occupied during the renovation.
- .2 Co-ordinate Progress Schedule with Departmental Representative and consultant.
- .3 Maintain fire access/control
- .4 The work will be done in phases one phase being completed and certified prior to the second phase being started.

## **1.6 PROTECTION OF REMAINING FIXTURES AND CABINetry**

- .1 The contractor is to document photo the condition of the existing cabinetry and fixtures at takeover of the area of work and supply a digital copy to the consultant.
- .2 The contractor is responsible for the protection of all damage caused during the construction process and it will be the responsibility of the contractor to make good to the acceptance of the Project Manager and Consultant.

## **1.7 CONTRACTOR USE OF PREMISES**

- .1 Limit use of premises for storage, and for access to allow:
  - .1 Owner Occupancy
  - .2 Work by other Contractors
  - .3 Public Usage
- .2 Keep clear products or equipment which may interfere with operation of Building or other contractors.
- .3 Assume responsibility for the protection and safekeeping of products under this contract.
- .4 Co-ordinate use of premises under direction of Consultant and Departmental Representative.
- .5 Obtain and pay for use of additional storage or work areas needed for operations under this Contract as required.
- .6 Ensure safe practices and work area to prevent injury or damage to portions of existing work which remain.
- .7 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Consultant.

## **1.8 OWNER OCCUPANCY**

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

## **1.9 EXISTING SERVICES**

- .1 Notify Consultant and utility companies of intended interruption of services and obtain required permission. Pay fees and obtain certificates and permits required.
- .2 Where Work involves breaking into or connecting to existing services, give 72 hours notice for necessary interruption of mechanical or electrical service throughout course of

- work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian, vehicular traffic and tenant operations.
- .3 Provide alternative routes for personnel and vehicular traffic (if required).
  - .4 Establish location and extent of service lines in area of work before starting Work. Notify Consultant of findings.
  - .5 Submit schedule to and obtain approval from Consultant and building operations for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
  - .6 Provide temporary services when directed by Consultant or as required to maintain critical building and tenant systems.
  - .7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
  - .8 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.
  - .9 Protect, relocate or maintain existing active services. When inactive services are encountered, inform consultant and owner prior to capping off in manner approved by authorities having jurisdiction.
  - .10 Record locations on as-built drawings of maintained, re-routed and abandoned service lines.
  - .11 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures

#### **1.10 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each document as follows:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Reviewed Shop Drawings.
  - .5 List of Outstanding Shop Drawings.
  - .6 Change Orders.
  - .7 Other Modifications to Contract.
  - .8 Field Test Reports.
  - .9 Copy of Approved Work Schedule.
  - .10 Health and Safety Plan and Other Safety Related Documents.
  - .11 Other documents as specified.

#### **1.11 CODES AND STANDARDS**

- .1 Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards board, the Canadian Standards Association, The National Building Code of Canada 2010, and all applicable Territorial and Municipal codes, and all standards listed below. In the case of conflict or discrepancy the most stringent requirement shall apply.

- .2 Meet or exceed requirements of contract documents, specified standards, codes and referenced documents.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1            General**

**1.1                ACCESS AND EGRESS**

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

**1.2                USE OF SITE AND FACILITIES**

- .1        Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2        Maintain existing services to building and provide for personnel and vehicle access.
- .3        Where security is reduced by work provide temporary means to maintain security.
- .4        Closures: protect work temporarily until permanent enclosures are completed.

**1.3                ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

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

**1.4                EXISTING SERVICES**

- .1        Notify, utility companies, Consultant, of intended interruption of services and obtain required permission.
- .2        Where Work involves breaking into or connecting to existing services, give Departmental Representative 72 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.

**1.5                SPECIAL REQUIREMENTS**

- .1        Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
- .2        Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3        Keep within limits of work and avenues of ingress and egress.

**1.6                SECURITY CLEARANCES**

- .1        Personnel employed on this project will be subject to security check. Obtain clearance, as instructed, for each individual who will be required to enter premises.



**1.7 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions. Smoking is not allowed on the property.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1        Project Supplementary Conditions

**1.2                CASH ALLOWANCES**

- .1        Include in Contract Price specified cash allowances.
- .2        Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage installation and other authorized expenses incurred in performing Work.
- .3        Contract Price, and not cash allowance, includes Contractor's overhead and profit in connection with such cash allowance.
- .4        Contract Price will be adjusted by written order to provide for excess or deficit to each cash allowance.
- .5        Where costs under a cash allowance exceed amount of allowance, Contractor will be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.
- .6        Include progress payments on accounts of work authorized under cash allowances in Consultant's monthly certificate for payment.

**1.3                CONTINGENCY ALLOWANCE**

- .1        Include in Contract Price contingency allowance of \$10,000.00.
- .2        Do not include in Contract Price, additional contingency allowances for products, installation, overhead or profit.

**Part 2            Products**

**2.1                NOT USED**

- .1        Not Used.

**Part 3            Execution**

**3.1                NOT USED**

- .1        Not Used.

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**END OF SECTION**

17-007-01-30

**Part 1            General**

**1.1                ON-SITE DOCUMENTS**

- .1      Contract Documents
- .2      Specifications
- .3      Addenda
- .4      Reviewed shop drawings
- .5      Change orders
- .6      Other modifications in contract
- .7      Field test reports
- .8      Copy of approved Work Schedule
- .9      Manufacturers installation and application instructions
- .10     Labour conditions and wage schedules
- .11     Project Record Documents (for as-built purposes)
- .12     Codes and Standards listed in 01 11 00

**1.2                ADMINISTRATIVE**

- .1      Attend project meetings throughout the progress of the work at the call of Consultant.
- .2      Provide physical space and make arrangements for meetings.
- .3      Consultant will record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .4      Consultant will reproduce and distribute copies of minutes within three regular business days after meetings and transmit to meeting participants, affected parties not in attendance, Project Manager, and Contractor.
- .5      Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

**1.3                PRECONSTRUCTION MEETING**

- .1      After award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. Meeting will be held at the location and time designated by the departmental representative

- .2 Departmental Representative, Engineer and Consultant, Contractor, major Subcontractors, will be in attendance. Others may be in attendance at the discretion of the departmental representative or the Contractor. Representatives of the local Building Manager may also be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum 2 days before meeting.
- .4 Agenda to include:
  - .1 Appointment of official representative of participants in the Work.
  - .2 Schedule of Work: in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
  - .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
  - .5 Delivery schedule of specified equipment.
  - .6 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
  - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
  - .8 Owner provided products.
  - .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures
  - .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals
  - .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
  - .12 Monthly progress claims, administrative procedures, photographs, hold backs.
  - .13 Appointment of inspection and testing agencies or firms.
  - .14 Insurances, transcript of policies.
- .5 Comply with Departmental Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic and parking facilities.
- .6 During construction coordinate use of site and facilities through Departmental Representatives procedures for intra-project communications: submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.
- .7 Comply with instruction of consultant for use of Temporary utilities and construction facilities.
- .8 Coordinate field engineering and layout work with consultant.

#### **1.4 PROGRESS MEETINGS**

- .1 During course of Work at the discretion of the Consultant and Departmental Representative.

- .2 Representatives of the Contractor, major Subcontractors involved in the work and other as required and decided upon by the Departmental Representative or Contractor are to be in attendance. Contractor to notify all sub-contractors.
- .3 Consultant will notify contractor min 5 days prior to meetings
- .4 Consultant to record minutes of meetings and circulate to attending parties and affected parties not in attendance within 5 days after meeting.
- .5 Agenda to include the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.
  - .3 Field observations, problems, conflicts.
  - .4 Problems which impede construction schedule.
  - .5 Review of off-site fabrication delivery schedules.
  - .6 Corrective measures and procedures to regain projected schedule.
  - .7 Revision to construction schedule.
  - .8 Progress schedule, during succeeding work period.
  - .9 Review submittal schedules: expedite as required.
  - .10 Maintenance of quality standards.
  - .11 Review proposed changes for affect on construction schedule and on completion date.
  - .12 Other business.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **Part 1 General**

### **1.1 DEFINITIONS**

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

### **1.2 REQUIREMENTS**

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Construction Progress Schedule to be Completed in Microsoft Project or Similar Software.
- .3 Plan to complete Work in accordance with prescribed milestones and time frame.
- .4 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.

- .5 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

### **1.3 SUBMITTALS**

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

### **1.4 PROJECT MILESTONES**

### **1.5 MASTER PLAN**

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

### **1.6 PROJECT SCHEDULE**

- .1 Develop detailed Project Schedule derived from Master Plan.

### **1.7 PROJECT SCHEDULE REPORTING**

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

### **1.8 PROJECT MEETINGS**

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

**Part 2**      **Products**

**2.1**            **NOT USED**

.1      Not used.

**Part 3**      **Execution**

**3.1**            **NOT USED**

.1      Not used.

**END OF SECTION**



**Part 1            General**

**1.1                ADMINISTRATIVE**

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

**1.2                SHOP DRAWINGS AND PRODUCT DATA**

- .1        The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2        Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in the Northwest Territories, Canada this is only required when requested.
- .3        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 co-ordinated, regardless of Section under which

adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .4 Allow 14 days for Consultant's review of each submission.
- .5 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- .6 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Wiring diagrams.
    - .9 Single line and schematic diagrams.
    - .10 Relationship to adjacent work.
- .9 After Property Manager's, Engineer's, Consultant's review, distribute copies.

- .10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Consultant and Engineer may reasonably request.
- .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Consultant and Engineer.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Consultant and Engineer
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic or 3 copies of manufacturers instructions for requirements requested in specification Sections and as requested by Consultant and Engineer.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit 3 copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant and Engineer.
  - .1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .16 Submit 3 copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant and Engineer
- .17 Delete information not applicable to project.
- .18 Supplement standard information to provide details applicable to project.
- .19 If upon review by Consultant and Engineer, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .20 The review of shop drawings by and Consultant is for sole purpose of ascertaining conformance with general concept.

- .1 This review shall not mean that Consultant approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

### **1.3 SAMPLES**

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Consultants business address.
- .3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- .6 Make changes in samples which Consultant may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

### **1.4 NOT USED**

- .1 Not Used.

## **Part 2 Execution**

### **2.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1        Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2        Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).
- .3        Northwest Territories
  - .1        The Workers Compensation Act latest edition.

**1.2                SUBMITTALS**

- .1        Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2        Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1        Results of site specific safety hazard assessment.
  - .2        Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3        Submit copies of Contractor's authorized representative's work site health and safety inspection reports to Consultant or authority having jurisdiction, as required.
- .4        Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5        Submit copies of incident and accident reports.

**1.3                SAFETY ASSESSMENT**

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

**1.4                MEETINGS**

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

**1.5                REGULATORY REQUIREMENTS**

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

**1.6                GENERAL REQUIREMENTS**

- .1        Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

- .2 Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

## **1.7 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

## **1.8 COMPLIANCE REQUIREMENTS**

- .1 Comply with The Workers Compensation Act, Workplace Safety Regulation, Northwest Territories Regulation.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

## **1.9 UNFORSEEN HAZARDS**

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

## **1.10 POSTING OF DOCUMENTS**

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

## **1.11 CORRECTION OF NON-COMPLIANCE**

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

## **1.12 WORK STOPPAGE**

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

**Part 2            Products**

**2.1                NOT USED**

.1            Not used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not used.

**END OF SECTION**

**Part 1        General**

**1.1            SUBMITTALS**

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

**1.2            INSTALLATION AND REMOVAL**

- .1        Provide temporary utilities controls in order to execute work expeditiously.
- .2        Remove from site all such work after use.

**1.3            WATER SUPPLY**

- .1        Water is available for use by the contractor provided by the Building Owner

**1.4            TEMPORARY HEATING AND VENTILATION**

- .1        Provide temporary heating as required during construction period, including attendance, maintenance and fuel.
- .2        Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
- .3        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.
- .4        Maintain temperatures of minimum 21 degrees C in areas where construction is in progress.
- .5        Ventilating:
  - .1        Prevent accumulations 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 time after cessation of work process to assure removal of harmful contaminants.



- .6 Permanent heating system of building, to be used when available. Be responsible for damage to heating system if use is permitted.
- .7 On completion of Work for which permanent heating system is used, replace filters, clean furnaces and power vacuum all ductwork inform Consultant of completion.
- .8 Ensure Date of Substantial Performance and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by Consultant.
- .9 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
  - .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.
- .10 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

#### **1.5 TEMPORARY POWER AND LIGHT**

- .1 Power is available for use by the contractor provided by the Building Owner.
- .2 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of consultant provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

#### **1.6 TEMPORARY COMMUNICATION FACILITIES**

- .1 Contractor to furnish own Temporary phone, Fax and e-mail.

#### **1.7 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

**END OF SECTION**

**Part 1            General**

**1.1                SUBMITTALS**

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

**1.2                INSTALLATION AND REMOVAL**

- .1        Prepare site plan indicating proposed location and dimensions of area to be fenced and used by contractor, number of trailers used, avenues of ingress/egress to fenced area and details of fence installation
- .2        Indicate use of supplemental or other staging area.
- .3        Provide construction facilities in order to execute work expeditiously.
- .4        Remove from site all such work after use.

**1.3                SITE STORAGE/LOADING**

- .1        Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2        Do not load or permit to load any part of Work with weight or force that will endanger Work.

**1.4                CONSTRUCTION PARKING**

- .1        Parking will be permitted on site provided it does not disrupt performance of Work or impede the operation of the detachment.
- .2        Adequate parking must be maintained for public and building occupant access. This area is already defined and is not to be used for contractor parking.
- .3        Provide and maintain adequate access to project site.

**1.5                EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1        Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2        Locate materials Required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

**1.6                SANITARY FACILITIES**

- .1        Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

**1.7 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Remove materials resulting from demolition as soon as possible from site.
- .4 Stack stored new or salvaged material not in construction facilities.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1    Canadian General Standards Board (CGSB)
  - .1        CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
  - .2        CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2    Canadian Standards Association (CSA International)
  - .1        CSA-O121-M1978(R2003), Douglas Fir Plywood.

**1.2                INSTALLATION AND REMOVAL**

- .1    Provide temporary controls in order to execute Work expeditiously.
- .2    Remove from site all such work after use.

**1.3                DUST TIGHT SCREENS**

- .1    Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2    Maintain and relocate protection until such work is complete.

**1.4                ACCESS TO SITE**

- .1    Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

**1.5                FIRE ROUTES**

- .1    Maintain access to property including overhead clearances for use by emergency response vehicles

**1.6                PROTECTION OF BUILDING FINISHES**

- .1    Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2    Provide necessary screens, covers, and hoardings.
- .3    Confirm with property manager and detachment commander locations and installation schedule 3 days prior to installation.
- .4    Be responsible for damage incurred due to lack of or improper protection.

**Part 2**            **Products**

**2.1**                **NOT USED**

.1                  Not Used.

**Part 3**            **Execution**

**3.1**                **NOT USED**

.1                  Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1        Within text of each specifications section, reference may be made to reference standards.
- .2        Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3        If there is question as to whether products or systems are in conformance with applicable standards, Project Manager and/or Consultant reserves right to have such products or systems tested to prove or disprove conformance.
- .4        Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

**1.2                QUALITY**

- .1        Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2        Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3        Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is 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 disputes arise as to quality or fitness of products, decision rests strictly with Project Manager based upon requirements of Contract Documents.
- .5        Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout 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.

**1.3                AVAILABILITY**

- .1        Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

- .2 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

#### **1.4 STORAGE, HANDLING AND PROTECTION**

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .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 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, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in 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 satisfaction of Consultant.
- .9 Touch-up damaged factory finished surfaces to Consultants satisfaction. Use touch-up materials to match original. Do not paint over name plates.

#### **1.5 TRANSPORTATION**

- .1 Pay costs of transportation of products required in performance of Work.

#### **1.6 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Project Manager will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

**1.7 QUALITY OF WORK**

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Consultant reserves the right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with the Consultant, whose decision is final.

**1.8 CO-ORDINATION**

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

**1.9 CONCEALMENT**

- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation inform Consultant if there is interference. Install as directed by Consultant.

**1.10 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

**1.11 LOCATION OF FIXTURES**

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Engineer of conflicting installation. Install as directed.

**1.12 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 affected specification Section.



- .4 Space anchors within individual load limit or shear capacity and ensure 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.

**1.13 FASTENINGS - EQUIPMENT**

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts the end of the bolt shaft.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

**1.14 PROTECTION OF WORK IN PROGRESS**

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Engineer.

**1.15 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                LOCATION OF EQUIPMENT AND FIXTURES**

- .1      Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2      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.
- .3      Inform Consultant of impending installation and obtain approval for actual location.
- .4      Submit field drawings to indicate relative position of various services and equipment when required by Consultant.

**1.2                RECORDS**

- .1      Maintain a complete, accurate log of control and survey work as it progresses.
- .2      On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3      Record locations of maintained, re-routed and abandoned service lines.

**1.3                SUBMITTALS**

- .1      On request of Departmental Representative or Consultant, submit documentation to verify accuracy of field engineering work.

**Part 2            Products**

**2.1                NOT USED**

- .1      Not Used.

**Part 3            Execution**

**3.1                NOT USED**

- .1      Not Used.

**END OF SECTION**

**Part 1        General**

**1.1            SUBMITTALS**

- .1        Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2        Submit written request in advance of cutting or alteration which affects:
  - .1        Structural integrity of elements of project.
  - .2        Integrity of weather-exposed or moisture-resistant elements.
  - .3        Efficiency, maintenance, or safety of operational elements. Note: Fire panel will alarm when hot cutting is done. Owner and building tenants requires notice when shutting down fire alarm system to do work. When alarm is off, contractor will provide fire watch.
  - .4        Visual qualities of sight-exposed elements.
  - .5        Work of Owner or separate contractor.
- .3        Include in request:
  - .1        Identification of project.
  - .2        Location and description of affected Work.
  - .3        Statement on necessity for cutting or alteration.
  - .4        Description of proposed Work, and products to be used.
  - .5        Alternatives to cutting and patching.
  - .6        Effect on Work of Owner or separate contractor.
  - .7        Written permission of affected separate contractor.
  - .8        Date and time work will be executed.

**1.2            MATERIALS**

- .1        Required for original installation.
- .2        Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

**1.3            PREPARATION**

- .1        Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2        After uncovering, inspect conditions affecting performance of Work.
- .3        Beginning of cutting or patching means acceptance of existing conditions.
- .4        Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5        Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

**1.4 EXECUTION**

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .7 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .9 Restore work with new products in accordance with requirements of Contract Documents.
- .10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .11 At penetration of fire rated wall, ceiling or floor construction, completely seal voids with firestopping material in accordance with Section 07 8400 – Firestopping, full thickness of the construction element
- .12 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.
- .13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

**END OF SECTION**

**Part 1          General**

**1.1            PROJECT CLEANLINESS**

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

**1.2            FINAL CLEANING**

- .1      When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2      Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3      Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4      Remove waste products and debris including that caused by Owner or other Contractors.
- .5      Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .11 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

**1.3 WASTE MANAGEMENT AND DISPOSAL**

- .1 Dispose of waste and separate waste materials for recycling as per requirements of local authorities.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1           General**

**1.1               INSPECTION AND DECLARATION**

- .1 Contractor's Inspection: Contractor and Subcontractors: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1 Notify Consultant in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .2 Request Inspection.
- .2 Consultant and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
  - .1 Work has been completed and inspected for compliance with Contract Documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Equipment and systems have been tested, adjusted and balanced and are fully operational.
  - .4 Certificates required by Fire Commissioner, Utility companies HRDC Labour Programs-Fire Protection, Engineering Services and Local Authorities have been submitted.
  - .5 Operation of systems have been demonstrated to Owner's personnel.
  - .6 Work is complete and ready for final inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Consultant and Contractor. If Work is deemed incomplete by Consultant, complete outstanding items and request reinspection.

**1.2               CLEANING**

- .1 In accordance with Section 01 74 11 – Cleaning.
- .2 Remove waste and surplus materials, rubbish and construction facilities from the site in accordance with local authorities.

**Part 2           Products**

**2.1               NOT USED**

- .1 Not Used.



**Part 3            Execution**

**3.1                Not Used**

.1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1 Canadian Standards Association (CSA International)
  - .1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures.

**1.2                SUBMITTALS**

- .1 Submit shop drawings in accordance with Sections 01 33 00 - Submittal Procedures 01 00 10 - General Instructions.

**1.3                SITE CONDITIONS**

- .1 Should material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Consultant immediately.
  - .1 Do not proceed until written instructions have been received from Consultant.

**Part 2            Products**

**2.1                NOT USED**

- .1 Not used.

**Part 3            Execution**

**3.1                PREPARATION**

- .1 Inspect site with Consultant and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.

**3.2                PROTECTION**

- .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features and parts of building to remain in place. Provide bracing and shoring required.
- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building systems, services and equipment.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.

**3.3 SALVAGE**

- .1 Refer to demolition drawings and specifications for items to be salvaged for reuse.
- .2 Items to be stored in weather tight enclosure to ensure that no damaged is caused prior to re-installation

**3.4 SITE REMOVALS**

- .1 Remove items as indicated.

**3.5 DEMOLITION**

- .1 Remove parts of existing building to permit new construction.
- .2 Trim edges of partially demolished building elements to tolerances as defined by Consultant to suit future use.

**3.6 DISPOSAL**

- .1 Dispose of removed materials, except where specified otherwise, in accordance with authority having jurisdiction.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1    ASTM International
  - .1        ASTM C919-08, Standard Practice for Use of Sealants in Acoustical Applications.
- .2    Canadian General Standards Board (CGSB)
  - .1        CGSB 19-GP-5M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
  - .2        CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
  - .3        CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
  - .4        CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
  - .5        CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.
- .3    General Services Administration (GSA) - Federal Specifications (FS)
  - .1        FS-SS-S-200-E(2)1993, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.
- .4    Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).

**1.2                ACTION AND INFORMATIONAL SUBMITTALS**

- .1    Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2    Product Data:
  - .1        Submit manufacturer's instructions, printed product literature and data sheets for joint sealants and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2        Manufacturer's product to describe:
    - .1            Caulking compound.
    - .2            Primers.
    - .3            Sealing compound, each type, including compatibility when different sealants are in contact with each other.

**1.3                CLOSEOUT SUBMITTALS**

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

## **1.4 DELIVERY, STORAGE AND HANDLING**

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

## **1.5 SITE CONDITIONS**

- .1 Ambient Conditions:
  - .1 Proceed with installation of joint sealants only when:
    - .1 Ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 4.4 degrees C.
    - .2 Joint substrates are dry.
    - .3 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
- .2 Joint-Width Conditions:
  - .1 Proceed with installation of joint sealants only where joint widths are more than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
  - .1 Proceed with installation of joint sealants only after contaminants capable of interfering with adhesion are removed from joint substrates.

## **1.6 ENVIRONMENTAL REQUIREMENTS**

- .1 Comply with 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 (MSDS) acceptable to Health Canada.
- .2 Conform to manufacturers recommended installation conditions for applications of sealants
- .3 Ventilate area of work by use of portable supply and exhaust fans.

## **Part 2 Products**

### **2.1 SEALANT MATERIALS**

- .1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

- .2 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.
- .3 Where sealants are qualified with primers use only these primers.
- .4 All sealants to be used in accordance with manufacturers recommended applications
- .5 It remains the contractors responsibility to verify compatibility of the sealant with the substrate, primers, backer rods and weather conditions prior to installation.
  - .1 Bring any discrepancies with the above to the attention of the project manager.

## 2.2 SEALANT MATERIAL DESIGNATIONS

- .1 Exterior joints in horizontal wearing (concrete) surfaces: Polyurethane, semi-self-levelling, moisture curing, non-staining, non-bleeding, colour as selected.
  - .1 ASTM C920
  - .2 Single Component
  - .3 Pourable
  - .4 Class – Cyclic Movement - 100/50
  - .5 CAN/CGSB – 19.13-M87
  - .6 Acceptable Product: Vulkem 45 SSL – Tremco Sealants, or approved equivalent.
- .2 General exterior use: Silicone, neutral cure ultra-low modulus, moisture curing, nonstaining, nonbleeding, colour as selected.
  - .1 ASTM C920
  - .2 Single Component
  - .3 Non-Sag
  - .4 Class – Cyclic Movement - 100/50
  - .5 Class ‘A’
  - .6 ASTM C1248, C1382, E84
  - .7 CAN/CGSB – 19.13-M87
  - .8 Acceptable Product: Spectrem 1 – Tremco Sealants, or approved equivalent.
- .3 Glazing: Silicone, neutral cure, medium modulus, colour as selected.
  - .1 ASTM C920
  - .2 Single Component
  - .3 Non-Sag
  - .4 Class – Cyclic Movement - 50
  - .5 Class ‘A’
  - .6 ASTM C1248
  - .7 CAN/CGSB – 19.13-M87

- .8 Acceptable Product: Spectrem 2 – Tremco Sealants, or approved equivalent.
- .4 Air-Barrier to Window air-seal sealant: Silyl-terminated polyether polymer (STPe), moisture cure, medium modulus.
  - .1 Compatible with Air-Barrier system.
  - .2 ASTM C920
  - .3 Single Component
  - .4 Non-Sag
  - .5 Class – Cyclic Movement - 25
  - .6 Class ‘A’
  - .7 Acceptable Product: Bakor HE925 BES, or approved equivalent.
- .5 General interior use: painted gypsum, painted concrete, painted concrete block: Acrylic latex, colour as selected.
  - .1 Low VOC.
  - .2 Single Component
  - .3 Non-Sag
  - .2 Class – Cyclic Movement - 12.5
  - .3 Class ‘A’
  - .4 CAN/CGSB 19-GP-14M
  - .5 Acceptable Product: Tremflex 834 – Tremco Sealants, or approved equivalent.
- .6 Plumbing fixtures and general washroom / kitchen (wet-area) usage: sinks, tubs, urinals, water-closets, vanities: Silicone, acetoxy, moisture curing, with fungicide.
  - .1 ASTM C920
  - .2 Single Component
  - .3 Non-Sag
  - .4 Class – Cyclic Movement – 25
  - .5 Class ‘A’
  - .6 CAN/CGSB – 19.13-M87
  - .7 Acceptable Product: Tremsil 200 – Tremco Sealants, or approved equivalent.
- .7 Acoustical Sealant: to ASTM C919: Synthetic rubber, single-component, non-skinning, non-hardening.
  - .1 Single Component
  - .2 Non-Sag
  - .3 Class – Cyclic Movement – N/A
  - .4 CAN/CGSB 19.21 M87
  - .5 Acceptable Product: Acoustical Sealant – Tremco Sealants, or approved

- .8 Preformed compressible and non-compressible back-up materials:
  - .1 Polyethylene, urethane, neoprene or vinyl foam:
    - .1 Extruded open closed cell foam backer rod.
    - .2 Size: oversize 30 to 50 %.
  - .2 Neoprene or butyl rubber:
    - .1 Round solid rod, Shore A hardness 70.
  - .3 High density foam:
    - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m<sup>3</sup> density, or neoprene foam backer, size as recommended by manufacturer.
  - .4 Bond breaker tape:
    - .1 Polyethylene bond breaker tape which will not bond to sealant.

### **2.3 JOINT CLEANER**

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant in accordance with sealant manufacturer's written recommendations.
- .2 Primer: in accordance with sealant manufacturer's written recommendations.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for joint sealants installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.
  - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied

### **3.2 SURFACE PREPARATION**

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.



### **3.3 PRIMING**

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

### **3.4 BACKUP MATERIAL**

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

### **3.5 MIXING**

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

### **3.6 APPLICATION**

- .1 Sealant:
  - .1 Apply sealant in accordance with manufacturer's written instructions.
  - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
  - .3 Apply sealant in continuous beads.
  - .4 Apply sealant using gun with proper size nozzle.
  - .5 Use sufficient pressure to fill voids and joints solid.
  - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
  - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
  - .8 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing:
  - .1 Cure sealants in accordance with sealant manufacturer's instructions.
  - .2 Do not cover up sealants until proper curing has taken place.

### **3.7 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Clean adjacent surfaces immediately.
  - .3 Remove excess and droppings, using recommended cleaners as work progresses.
  - .4 Remove masking tape after initial set of sealant.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.8 PROTECTION**

- .1 Protect installed products and components from damage during construction.

- .2 Repair damage to adjacent materials caused by joint sealants installation.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM A653/A653M-06a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM B29-03, Standard Specification for Refined Lead.
  - .3 ASTM B749-03, Standard Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
  - .2 CGSB 41-GP-19Ma-84, Rigid Vinyl Extrusions for Windows and Doors.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA-G40.20-04/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CSA W59-03, Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Steel Door Manufacturers' Association (CSDMA)
  - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2000.
  - .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors, 1990.
- .5 National Fire Protection Association (NFPA)
  - .1 NFPA 80-2007, Standard for Fire Doors and Fire Windows.
  - .2 NFPA 252-03, Standard Methods of Fire Tests of Door Assemblies.
- .6 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113-04, Architectural Coatings.
  - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
- .7 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S701-01, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
  - .2 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings.
  - .3 CAN/ULC-S704-03, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
  - .4 CAN4-S104-M80, Standard Method for Fire Tests of Door Assemblies.
  - .5 CAN4-S105-M85, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104.

## 1.2 SYSTEM DESCRIPTION

- .1 Design Requirements:
  - .1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35 degrees C to 35 degrees C.
  - .2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kPa not to exceed 1/175th of span.
  - .3 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 NFPA 252 for ratings specified or indicated.
  - .4 Provide fire labelled frames for openings requiring fire protection ratings. Test products in conformance with CAN4-S104, ASTM E152 NFPA 252 and listed by nationally recognized agency having factory inspection services.

## 1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data: in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed louvred, arrangement of hardware fire rating and finishes.
  - .2 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings reinforcing fire rating finishes.
  - .3 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

## 1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## Part 2 Products

### 2.1 MATERIALS

- .1 .
- .2 Hot dipped galvanized steel sheet: to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.
- .3 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.

- .4 Composites: balance of core materials used in conjunction with lead: in accordance with manufacturers' proprietary design.

## 2.2 DOOR CORE MATERIALS

- .1 Honeycomb construction:
  - .1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5 kg/m<sup>3</sup> minimum sanded to required thickness.
  - .2 Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door to 250 degrees C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E152 NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

## 2.3 ADHESIVES

- .1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
- .2 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.
- .3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive.

## 2.4 PRIMER

- .1 Touch-up prime CAN/CGSB-1.181.

## 2.5 PAINT

- .1 Field paint steel doors and frames in accordance with Sections 09 91 23 - Interior Painting, 09 91 13 - Exterior Painting. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.

## 2.6 ACCESSORIES

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Exterior Caps: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma steel.
- .3 Fabricate glazing stops as formed channel, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
- .4 Frame Thermal Breaks: Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA
- .5 Metallic paste filler: to manufacturer's standard.
- .6 Fire labels: metal riveted.
- .7 Glazing: see Section 08 80 50 Glazing.
- .8 Make provisions for glazing as indicated and provide necessary glazing stops.

- .1 Provide removable stainless steel glazing beads for use with glazing tapes and compounds and secured with countersunk stainless steel screws.
- .2 Design exterior glazing stops to be tamperproof.

## **2.7 FRAMES FABRICATION GENERAL**

- .1 Fabricate frames in accordance with CSDMA specifications.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Exterior frames: as per door schedule welded construction.
- .4 Interior frames: as per door schedule, welded construction.
- .5 Blank, reinforce, drill and tap frames for mortised, template hardware, electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
- .6 Protect mortised cutouts with steel guard boxes.
- .7 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
- .8 Manufacturer's nameplates on frames and screens are not permitted.
- .9 Conceal fastenings except where exposed fastenings are indicated.
- .10 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.
- .11 Insulate exterior frame components with polyurethane insulation.

## **2.8 FRAME ANCHORAGE**

- .1 Provide appropriate anchorage to floor and wall construction.
- .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
- .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.
- .4 Locate anchors for frames in existing openings not more than 150 mm from top and bottom of each jambs and intermediate at 660 mm on centre maximum.

## **2.9 FRAMES: WELDED TYPE**

- .1 Welding in accordance with CSA W59.
- .2 Accurately mitre or mechanically joint frame product and securely weld on inside of profile.
- .3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.
- .4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
- .5 Securely attach floor anchors to inside of each jamb profile.

- .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.
- .7 Securely attach lead to inside of frame profile from return to jamb soffit (inclusive) on door side of frame only.

## **2.10 DOOR FABRICATION GENERAL**

- .1 Exterior doors shall be laminated core with core type as indicated on the door schedule.
- .2 Interior doors shall be laminated core with core type as indicated on the door schedule. Longitudinal edges shall be:
  - .1 Unless indicated otherwise on the door schedule: Mechanically interlocked.
  - .2 Where indicated on the door schedule: Mechanically interlocked, tack welded at top and bottom of door, above and below each edge cutout and at 150 mm (6") on center with visible edge seams.
- .3 Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.
- .4 Blank, reinforce, drill doors and tap for mortised, templated hardware electronic hardware.
- .5 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .6 Reinforce doors where required, for surface mounted hardware. Provide flush PVC steel top caps to exterior doors. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
- .7 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .8 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in conformance with CAN4-S104 ASTM E152 NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.
- .9 Manufacturer's nameplates on doors are not permitted.

## **2.11 DOORS: CORE CONSTRUCTION**

- .1 Laminated Core Construction
  - .1 Exterior Doors: Both face sheets for exterior doors shall be formed from a sheet of steel with polyisocyanurate core, laminated under pressure to face sheets.
  - .2 Interior Doors: Both face sheets for interior doors shall be formed from a sheet steel with honeycomb, vertical steel stiffener core or temperature rise rated core, (as specified on the

## **2.12 THERMALLY BROKEN DOORS AND FRAMES**

- .1 Fabricate thermally broken doors by using insulated core and separating exterior parts from interior parts with continuous interlocking thermal break.
- .2 Thermal break: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma.

- .3 Fabricate thermally broken frames separating exterior parts from interior parts with continuous interlocking thermal break.
- .4 Apply insulation.

### **Part 3 Execution**

#### **3.1 MANUFACTURER'S INSTRUCTIONS**

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

#### **3.2 INSTALLATION GENERAL**

- .1 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.
- .2 Install doors and frames to CSDMA Installation Guide.

#### **3.3 FRAME INSTALLATION**

- .1 Set frames plumb, square, level and at correct elevation.
- .2 Secure anchorages and connections to adjacent construction.
- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.
- .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .5 Caulk perimeter of frames between frame and adjacent material.
- .6 Maintain continuity of air barrier

#### **3.4 DOOR INSTALLATION**

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 00 - Door Hardware.
- .2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.
  - .1 Hinge side: 1.0 mm.
  - .2 Latchside and head: 1.5 mm.
  - .3 Finished floor, top of carpet non-combustible sill and thresholds: 13 mm.
- .3 Adjust operable parts for correct function.
- .4 Install louvres.

#### **3.5 FINISH REPAIRS**

- .1 Touch up with primer finishes damaged during installation.



- .2 Fill exposed frame anchors surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

**3.6 GLAZING**

- .1 Install glazing for doors frames in accordance with Section 08 80 50 - Glazing.

**END OF SECTION**

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1        Non-rated rated acoustic pressed steel frames.
- .2        Non-rated fire rated acoustic hollow metal doors and panels.
- .3        Glazed lite acoustic steel frames.
- .4        Glass and glazing.
- .5        Perimeter and bottom acoustic seals, threshold, and astragal.

**1.2                RELATED SECTIONS**

- .1        Section 09 81 16 - Acoustic Blanket Insulation: Insulation inside door frames.
- .2        Section 07 92 00 - Joint Sealing: Caulking between doors and adjacent construction.
- .3        Section 08 71 10 - Door Hardware - General.
- .4        Section 09 91 15 - Painting: Field painting of doors frames doors and frames.

**1.3                REFERENCES**

- .1        ASTM A480/A480M-06b - General Requirements for Flat-Rolled Stainless Heat-Resisting Steel Plate, Sheet, and Strip.
- .2        ASTM A653/A653M-06 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .3        ASTM E90-04 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- .4        ASTM E413-04 - Classification for Rating Sound Insulation.
- .5        AWS D1.1/D1.1M:2006, Structural Welding Code - Steel.
- .6        CSDMA Selection and Usage Guide for Steel Doors and Frames, 1990.
- .7        HMMA 802-92 - Manufacturing of Hollow Metal Doors and Frames.
- .8        HMMA 840-99 - Installation and Storage of Hollow Metal Doors and Frames.
- .9        HMMA 865-03 - Guide Specifications For Swinging Sound Control Hollow Metal Doors and Frames.
- .10      NFPA 80-07 - Standard for Fire Doors and Other Opening Protective.
- .11      UL 10C-98 - Standard for Positive Pressure Fire Tests of Door Assemblies.

- .12 ANSI/ICC A117.1-2003 - Standard for Accessible and Usable Buildings and Facilities

**1.4 PERFORMANCE REQUIREMENTS**

- .1 Acoustic Performance: Minimum Sound Transmission Class (STC) 55 tested to ASTM E90. Label indicating sound transmission class shall be applied to the door and door frame.
- .2 The entire door assembly is required to meet or exceed field tested performance of STC 55 for all sound doors supplied, using ASTM E 336 “ Standard Test Method for Measurement of Airborne Sound Insulation for Buildings”
- .3 Label indicating fire resistance shall be applied to the door and door frame.
- .4 Installed Door and Frame Assembly: Conform to ANSI/ICC A117.1

**1.5 SUBMITTALS**

- .1 Section 01 33 00: Submission procedures.
- .2 Product Data: Provide product data on door construction and .
- .3 Shop Drawings: Indicate door and frame elevations, anchor types and closure methods, finishes location of cut-outs for hardware , and cut outs for glazing.
- .4 Samples: Submit manufacturer's door finish sample, frame corner sample, as well as perimeter acoustic gasket.
- .5 Test Data:
- .1 Submit test data indicating compliance with the Sound Transmission Class (STC) requirements. Include laboratory name, test report number, and date of test.
- .2 Submit certification from test laboratory qualified under the National Voluntary Accreditation Program (NVLAP) of the U.S. Bureau of Standards.
- .6 Installation Instructions: Submit manufacturer's installation instructions.

**1.6 QUALITY ASSURANCE**

- .1 Perform work to requirements of CSDMA (Canadian Steel Door Manufacturers Association)standards.
- .2 Manufacturer: Minimum 5 years documented experience manufacturing acoustic steel door and frame assemblies.
- .3 Pre-installation Meeting: Convene a pre-installation meeting 2 weeks before start of installation of acoustic door and frame assemblies. Require attendance of parties directly affecting work of this section, including contractor, architect, installer, and manufacturer's representative. Review installation and coordination with other work.

**1.7 DELIVERY, STORAGE AND PROTECTION**

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Comply with HMMA 840.
- .3 Weld minimum two temporary jamb spreaders per frame prior to shipment.
- .4 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.
- .5 Store in vertical position, spaced with blocking to permit air circulation between components.
- .6 Store materials out of water and covered to protect from damage.
- .7 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

**1.8 WARRANTY**

- .1 Manufacturer's Limited Warranty: Five (5) years from date of supply, covering material and workmanship.

**Part 2 Products**

**2.1 MANUFACTURERS**

- .1 AMBICO Limited
- .2 Substitutions: Refer to Section 01 60 00.

**2.2 MATERIALS**

- .1 Sheet Steel:
  - .1 Galvanized steel to ASTM A653/A653M, ZF180 (A60).
- .2 Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 .

**2.3 ACCESSORIES**

- .1 Hinges: Heavy weight butt type by section # 08 71 10
- .2 Glazing Stops: Formed galvanized steel channel, mitred corners; prepared for countersink tamperproof screws.
- .3 Glass: Type as tested to achieve STC and fire ratings. Glass to be factory supplied and pre-installed.
- .4 Primer: Rust inhibitive zinc chromate.

- .5 Threshold: Smooth and flush, to provide a seal for door in closed position.
- .6 Astragal: To be supplied loose ready for field assembly by others
- .7 Perimeter and bottom acoustic seals: To provide a seal for door in closed position.

## **2.4 FABRICATION**

- .1 Manufacture doors and frames to STC rating of 55, measured in accordance with ASTM E90.
- .2 Steel Doors:
  - .1 Sheet steel faces, thickness, design, and core suitable to achieve specified STC performance.
  - .2 Acoustic core construction, longitudinal edges, mechanically inter-locked with visible edge seams.
  - .3 Reinforce doors where surface-mounted hardware is required.
  - .4 Drill and tap for mortised, templated hardware.
  - .5 Top and Bottom Channels: Inverted, recessed, welded steel channels.
  - .6 Astragals: Metal acoustic astragals with integral acoustic seals for double doors.
- .3 Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, and STC rating where it shall be clearly visible.

## **2.5 FINISHES**

- .1 Factory Door Finish: Factory applied zinc chromate primer to be applied to all exposed surfaces

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Install components to manufacturer's written instructions.
- .2 Install steel doors and frames to CSDMA HMMA 840 standards and in accordance with NFPA 80 UL 10C, and local authority having jurisdiction.
- .3 Utilize welders certified by Canadian Welding Bureau (CWB) for field welding.
- .4 Coordinate with masonry gypsum board wall construction for anchor placement.
- .5 Set frames plumb, square, level and at correct elevation.
- .6 Allow for deflection to ensure that structural loads are not transmitted to frame.
- .7 Adjust operable parts for correct clearances and function.

.8 Install and adjust perimeter and bottom acoustic seals.

.9 Finish paint in accordance with Section 09 91 15.

### **3.2 ERECTION TOLERANCES**

.1 Section 01 73 00: Tolerances.

.2 Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than  $\pm 1/16$ in (1.5mm) in compliance with HMMA 841.

### **3.3 TESTING**

.1 Sound test to be performed on acoustic rooms to verify that installation of walls and door and frame assemblies meet the minimum acceptable field tested sound rating of STC 55. Testing will be carried out by an Inspection and Testing Agency designated by the Departmental Representative. Manufacturer/installer's Representative may be present to witness the testing.

.2 Owner will pay for tests out of cash allowances.

.3 Assemblies failing to meet above performance criteria to be corrected at no cost to the Owner.

.4 Retesting to confirm corrective action meets acoustic performance requirements will be paid for by the Contractor.

**END OF SECTION**

**Part 1        General**

**1.1            RELATED SECTIONS**

- .1        Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2        Section 01 61 00 - Common Product Requirements.
- .3        Section 01 78 00 - Closeout Submittals.
- .4        Section 08 14 16 - Flush Wood Doors.
- .5        Section 08 70 05 - Special Function Hardware.
- .6        Section 16: Electrical wiring for magnetic strikes, electric releases and electric locks.

**1.2            REFERENCES**

- .1        Canadian Steel Door and Frame Manufacturers' Association (CSDFMA).
  - .1        CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction): standard hardware location dimensions.
- .2        Canadian General Standards Board (CGSB).
  - .1        CAN/CGSB-69.17-M86(R1993), Bored and Preamsembled Locks and Latches.
  - .2        CAN/CGSB-69.18-M90/ANSI/BHMA A156.1-1981, Butts and Hinges.
  - .3        CAN/CGSB-69.19-93/ANSI/BHMA A156.3-1984, Exit Devices.
  - .4        CAN/CGSB-69.20-M90/ANSI/BHMA A156.4-1986, Door Controls (Closers).
  - .5        CAN/CGSB-69.21-M90/ANSI/BHMA A156.5-1984, Auxiliary Locks and Associated Products.
  - .6        CAN/CGSB-69.22-M90/ANSI/BHMA A156.6-1986, Architectural Door Trim.
  - .7        CAN/CGSB-69.24-M90/ANSI/BHMA A156.8-1982, Door Controls - Overhead Holders.
  - .8        CAN/CGSB-69.26-96/ANSI/BHMA A156.10-1991, Power-operated Pedestrian Doors.
  - .9        CAN/CGSB-69.28-M90/ANSI/BHMA A156.12-1986, Interconnected Locks and Latches.
  - .10        CAN/CGSB-69.29-93/ANSI/BHMA A156.13-1987, Mortise Locks and Latches.
  - .11        CAN/CGSB-69.30-93/ANSI/BHMA A156.14-1991, Sliding and Folding Door Hardware.
  - .12        CAN/CGSB-69.31-M89/ANSI/BHMA A156.15-1981, Closer/Holder Release Device.
  - .13        CAN/CGSB-69.32-M90/ANSI/BHMA A156.16-1981, Auxiliary Hardware.
  - .14        CAN/CGSB-69.33-M90/ANSI/BHMA A156.17-1987, Self-closing Hinges and Pivots.
  - .15        CAN/CGSB-69.34-93/ANSI/BHMA A156.18-1987, Materials and Finishes.

- .16 CAN/CGSB-69.35-M89/ANSI/BHMA A156.19-1984, Power Assist and Low Energy Power Operated Doors.
- .17 CAN/CGSB-69.36-M90/ANSI/BHMA A156.20-1984, Strap and Tee Hinges and Hasps.

### **1.3 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures .
- .2 Samples:
  - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures .
  - .2 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
  - .3 After approval samples will be returned for incorporation in the Work.
- .3 Hardware List:
  - .1 Submit contract hardware list in accordance with Section 01 33 00 - Submittal Procedures .
  - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .4 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.
- .5 Closeout Submittals
  - .1 Provide operation and maintenance data for door closers, locksets, door holders electrified hardware and fire exit hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals .

### **1.4 QUALITY ASSURANCE**

- .1 Regulatory Requirements:
  - .1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.
- .2 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

### **1.5 DELIVERY, STORAGE, AND HANDLING**

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements .
  - .2 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .2 Storage and Protection:



- .1 Store finishing hardware in locked, clean and dry area.

## **1.6 WASTE DISPOSAL AND MANAGEMENT**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal .
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Dispose of corrugated cardboard polystyrene plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

## **1.7 MAINTENANCE**

- .1 Extra Materials:
  - .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals .
  - .2 Supply two sets of wrenches for door closers locksets and fire exit hardware.

## **1.8 GUARANTEE**

- .1 Provide a manufacturer's written guarantee stating that the door closers specified in the Section are guaranteed against malfunction for a period of 60 months form the date of interim Certificate of Completion.

## **Part 2 Products**

### **2.1 HARDWARE ITEMS**

- .1 Use one manufacturer's products only for similar items.

### **2.2 DOOR HARDWARE**

- .1 Co-ordinate door hardware with Door, Frame and Hardware Schedule.
- .2 Locksets to be Schlage No Substitution.
- .3 Locks and latches:
  - .1 Bored and preassembled locks and latches: to CAN/CGSB-69.17, series 2000 preassembled lock, grade 1, designed for function and keyed as stated in Hardware Schedule.
  - .2 Interconnected locks and latches: to CAN/CGSB-69.28, series 5000 interconnected lock, grade 1, designed for function and keyed as stated in Hardware Schedule.
  - .3 Mortise locks and latches: to CAN/CGSB-69.29, series 1000 mortise lock, grade 1, designed for function and keyed as stated in Hardware Schedule.
  - .4 Lever handles : plain design with return. PROVIDE LOCKS WITH KNOBS FOR DOORS IN CELL BLOCK AREA AND AS SCHEDULED.
  - .5 Normal strikes: box type, lip projection not beyond jamb.

- .6 Cylinders: key into keying system as directed.
- .4 Keying: All cylinders with new keying system. Locks to be equipped with 6-pin cylinders keyed by bonded locksmith. Install cylinders just prior to interim inspection or takeover of area. Turn keys over to RCMP.
- .5 Butts and hinges:
  - .1 Butts and hinges: to CAN/CGSB-69.18, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule.
- .6 Door Closers and Accessories:
  - .1 Door controls (closers): to CAN/CGSB-69.20, size in accordance with CAN/CGSB-69.20, table A1.
- .7 Auxiliary hardware: to CAN/CGSB-69.32, listed in Hardware Schedule.
- .8 Door bottom seal: heavy duty , door seal of extruded aluminum frame and solid hollow closed cell neoprene weather seal, recessed in door bottom, closed ends, adjustable, clear anodized finish.

### **2.3 MISCELLANEOUS HARDWARE**

- .1 Latch Guard: Heavy Gauge formed steel plate cover to protect lock strike area, 300mm high, through bolt mounting formed to suit mortised locksets with standard strikes.
- .2 Door Viewers: Wide angle (min 180 degree) viewer prism, 12mm diameter male/female threaded, brass tube, adjustable for door thickness, to CAN/CGSB-69.32.
- .3 Key control cabinet.

### **2.4 FASTENINGS**

- .1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.
- .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .3 Exposed fastening devices to match finish of hardware.
- .4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
- .5 Use fasteners compatible with material through which they pass.

### **2.5 KEYING**

- .1 Contractor is to order 30 Abloy Cylinders (mortise and Kik) to re-key the entire building. Cylinders are to be shipped directly to the PTSS Locksmith to prepare keying and installation of the cylinders when project is complete

- .2 Contact the PTSS locksmith for a letter of authorization to purchase restricted cylinders from Abloy Canada.
- .3 Provide temporary locks in perimeter doors during construction until new locks are installed
- .4 Install cylinders in locks just prior to interim completion under supervision of government representative.
- .5 Cabinet locks: 5 pin tumbler locks, 3 keys for drawer lock.

### **Part 3 Execution**

#### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Furnish manufacturers' instructions for proper installation of each hardware component.

#### **3.2 INSTALLATION**

- .1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.
- .2 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .3 Install key control cabinet location to be noted on site.
- .4 Use only manufacturer's supplied fasteners. Failure to comply may void manufacturer's warranties and applicable licensed labels. Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .5 Remove construction cores when directed by Departmental Representative ; install permanent cores and check operation of locks.

#### **3.3 ADJUSTING**

- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to provide tight fit at contact points with frames.

### **3.4 CLEANING**

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions.
- .3 Remove protective material from hardware items where present.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

### **3.5 DEMONSTRATION**

- .1 Keying System Setup and Cabinet:
  - .1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.
  - .2 Place file keys and duplicate keys in key cabinet on their respective hooks.
  - .3 Lock key cabinet and turn over key to Departmental Representative.
- .2 Maintenance Staff Briefing:
  - .1 Brief maintenance staff regarding:
    - .1 Proper care, cleaning, and general maintenance of projects complete hardware.
    - .2 Description, use, handling, and storage of keys.
    - .3 Use, application and storage of wrenches for door closers locksets and fire exit hardware.
- .3 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

### **3.6 SCHEDULE**

- .1 Quantities shown in schedule are for one opening only. Include all hardware for each door listed, except as noted. See drawings for door layout and arrangement.
- .2 Hardware Schedule Based on the following:
  - .1 Hinge IVES (IVES)
  - .2 Mortise Lockset Corbin Ruswin Lock Company (SCH)
  - .3 Mortise Passage Corbin Ruswin Lock Company (SCH)
  - .4 Roller Latch Standard Metal Mfg. (SM)
  - .5 Door Pull Standard Metal Mfg. (SM)
  - .6 Door Closer LCN Closers (LCN)
  - .7 Kick Plate IVES (IVES)
  - .8 Wall Bumper IVES (IVES)

- .9 Overhead Holder/Stop Glynn - Johnson (GJ)
- .10 Door Bottom K. N. Crowder Mfg., Inc. (KNC)
- .11 Sound Seal K. N. Crowder Mfg., Inc. (KNC)
- .3 Finishes
  - .1 626 - Satin Chromium Plated
  - .2 628 - Satin Aluminum Anodized
  - .3 630 - Satin Stainless Steel
  - .4 652 - Satin Chromium Plated
  - .5 689 - Aluminum Painted

**Hardware Set#: 1**

Single: D1  
HMD x PSF 90 min.

Qty	UOM	Item Type	Item Series/Description	Finish
3.0	EA	Hinge	3CB1HW 4.5 X 4.5 NRP	652
1.0	EA	Mortise Lockset	L9080P-42n X "D" Keyway	626
1.0	EA	Door Closer	461 DA x S-CNS	689
1.0	EA	Kick Plate	8400 10 X 1 1/2" Less Door Width	630
1.0	EA	Overhead Holder/Stop	104S	630

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM C423-07, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .5 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113-04, Architectural Coatings.
  - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
- .6 Underwriter Laboratories of Canada (ULC)
  - .1 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit duplicate sample of each type acoustical unit.

**1.3 QUALITY ASSURANCE**

- .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
- .2 Construct one representative mock-up of each type acoustical wall treatment system.
- .3 Construct mock-up 10 m<sup>2</sup> minimum to indicate method of assembly, installation and fixing.
- .4 Construct mock-up where directed.
- .5 Allow 48 hours for inspection of mock-up by Consultant before proceeding with work.
- .6 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of the finished work.

## 1.4 ENVIRONMENTAL REQUIREMENTS

- .1 Commence installation after building enclosed and dust generating activities are completed.
- .2 Permit wet work to dry prior to commencement of installation.
- .3 Maintain uniform minimum temperature of 15 degrees C and relative humidity of 20-40% prior to, during and after installation.

## 1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

## 1.6 MAINTENANCE

- .1 Extra Materials:
  - .1 Provide extra materials of acoustic units and adhesive in accordance with Section 01 78 00 - Closeout Submittals.
  - .2 Provide acoustical units for maintenance use amounting to 2% of gross wall area for each pattern and type required for project.
  - .3 Provide sufficient adhesive to install extra material provided.
  - .4 Extra materials from same production run as installed materials.
  - .5 Identify each package of acoustical units including colour and type, and each container of adhesive.
  - .6 Deliver to Departmental Representative, upon completion of the work of this section.
  - .7 Store where directed by Departmental Representative.

## Part 2 Products

### 2.1 MATERIALS

- .1 Acoustical construction products must:
  - .1 Not require being labelled as poisonous, corrosive, flammable or explosive under Consumer Chemical and Container Regulations of the Hazardous Products Act.
  - .2 Be accompanied by detailed instructions for proper handling and installation so as to minimize health concerns.
  - .3 The manufacturing process must adhere to lifecycle assessment standards as per CANISO 14040
- .2 Demountable acoustic units
  - .1 Type 1: Cementitious wood fibre acoustical units:
    - .1 Tectum Standard Interior Wall Panels:
      - .1 Material: Aspen wood fibers bonded with inorganic hydraulic cement.
    - .2 Thickness: 1½ inches.

- .3 Edge: [Long edge beveled] [Tongue-and-groove edges, square ends].
  - .4 Width: [23¾ inches (603 mm)] [31¾ inches (806 mm)] [47¾ inches (1213 mm)].
  - .5 Length: as noted on drawings – site verify.
  - .6 Color: Factory painted white.
  - .7 Mounting Style: C-20. Provide all fasteners, 5/8” Furring strips and OCF 703 fiberglass insulation for a complete single source installation
- .2 Type 2: Fabric faced demountable acoustic units
- .1 Acoustic core material: to CAN/CGSB-92.1.
    - .1 Fabric faced demountable acoustic units.
      - .1 Acoustic core material; to CAN/CGSB-92.1, impact resistant 6 pcf fibreglass.
      - .2 Fabric Finish: Fire resistant 2-ply polyester, colour to be selected by Departmental Representative from manufacturer's standard range.
        - .1 Weight: 10oz/lin.yd. min.
        - .2 Standard of acceptance: Guilford of Maine
      - .3 Metal Support Clips: roll formed galvanized steel clip-on strip to acoustical unit supplier's standard allowing non-destructive de-mounting.
      - .4 Flame Spread: 25 or less, passing CAN/ULC-S102.
      - .5 Noise reduction coefficient (NRC) 1.10
      - .6 Sound Absorption Characteristics: Hz 150, 250, 500, 1000,2000, 4000 Sabins 0.31, 0.81, 1.09, 0.99, 1.02, 0.98
      - .7 Size as indicated on drawings.
  - .3 Metal support clips: roll formed galvanized steel to acoustic unit supplier's standard. Adhesive: type recommended by acoustic unit manufacturer.
  - .4 Staples, nails and screws: to CSA B111, non-corrosive finish, type recommended by acoustic unit manufacturer.
  - .5 Polyethylene: to CAN/CGSB-51.34, 0.015 mm thick.
  - .6 Select paints that provide reduced environmental impacts as described in section 09 91 23 - Interior Painting. Ensure that selected paint materials will not compromise the acoustical properties of wall treatments.

## 2.2 ACCESSORIES

- .1 Provide accessories as follows for type 1 installation.
  - .1 Tectum Painted Head Drywall Screws:
    - .1 Material: Steel
    - .2 Length: 2 ¼”
    - .3 Color: White



- .2 Tectum Moulding
  - .1 16 GA - Aluminum J channel moulding, color white, at the bottom of panel enclosing hat channel and bottom of tectum panel.
    - .1 Glue panel to J channel with no pick epoxy.

### **2.3 FABRICATION**

- .1 Demountable acoustic units:
  - .1 Use one piece trim, continuous, with mitred corners and concealed fastenings.
  - .2 Conceal and make magnetic fastenings integral part of trim. Adhesive bonding of magnets is not acceptable.

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

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

### **3.2 INSTALLATION**

- .1 Ensure substrate surface is straight to tolerance of plus or minus 3 mm over 3000 mm.
- .2 Install Type 1 acoustic units plumb and aligned. Arrange units as indicated. Cut units to be at least 50 % of unit width.
- .3 Install Fabric Type 2 acoustic units to clean, dry and firm substrate using mounting clips glued and screwed to the wall at a maximum 600 mm o.c. in accordance with manufacturer's instruction for a Type A mounting. If requested by Departmental Representative, glue full perimeter of panels to wall.
- .4 Scribe acoustic units to fit adjacent work. Butt joints tight.

### **3.3 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Keep acoustic installation and all components clean. Remove blemishes immediately.

### **3.4 PROTECTION**

- .1 Use polyethylene to protect finished acoustical wall treatment from damage.
- .2 Remove prior to substantial completion.

**END OF SECTION**

# **APPENDIX A**

# **PHOTOS**



Photo 1 - Hallway 1-159



Photo 2 - Hallway 1-159



Photo 3 - Interior Room 1-162

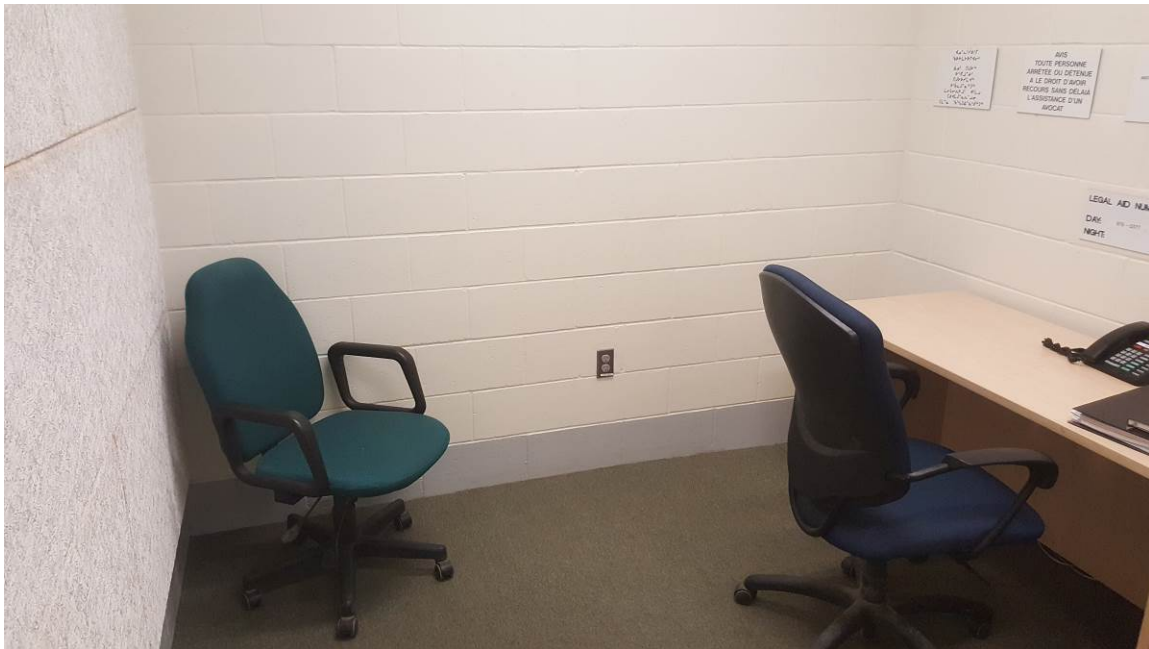


Photo 4 - Room 1-162



**Photo 5 - Room 1-162**



**Photo 6 - Room 1-162**



Photo 7 - Room 1-162

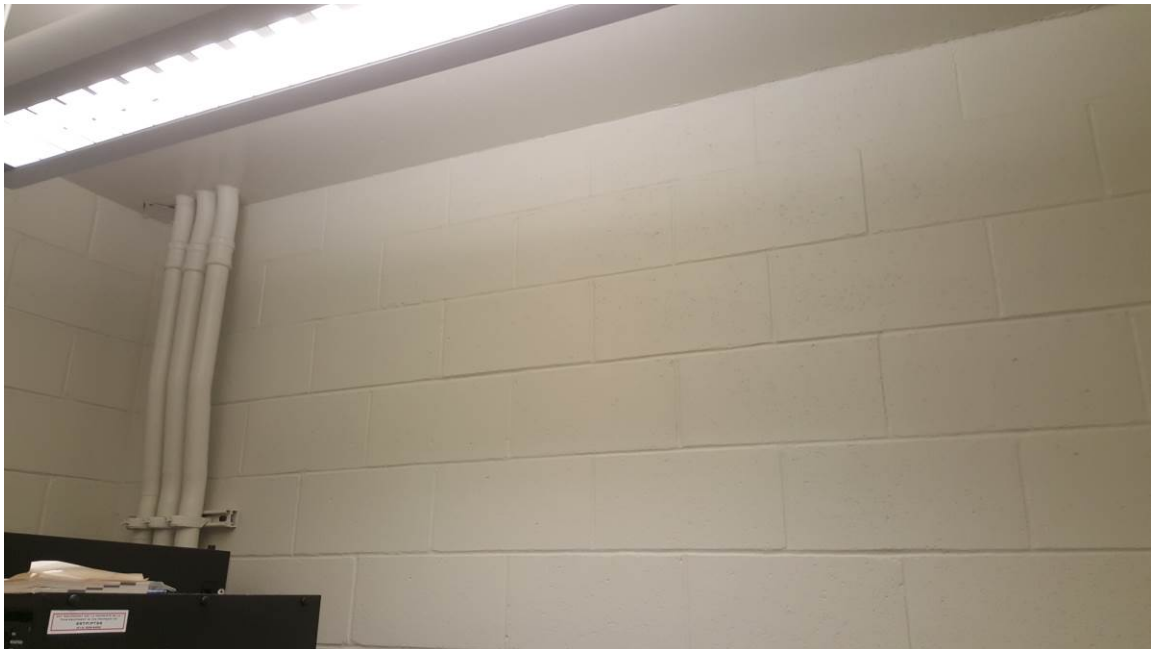
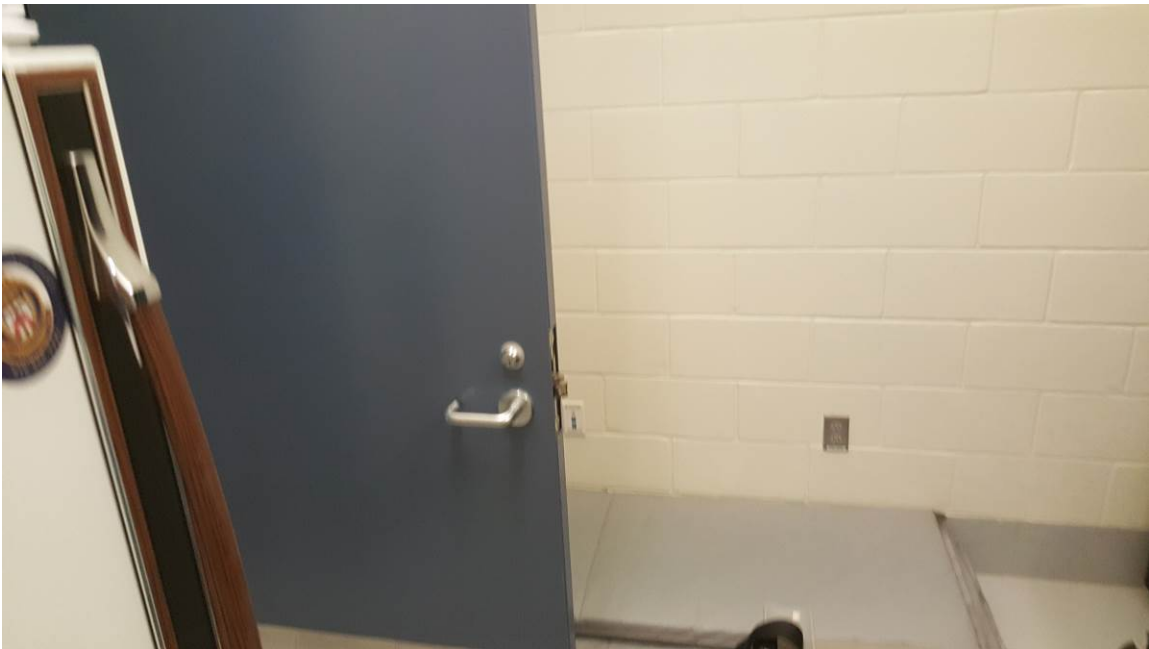


Photo 8 - Room 1-161



**Photo 9 - Room 1-161**



**Photo 10 - Room - 1-161**



**Photo 11 - Room 1-161**



**Photo 12 - Room - 1-120 - Floor Power**





**Photo 13 - Typical Hallway Door**



**Photo 14 - Window over Door for Room 1-103**