



## Public Works and Government Services Canada

Requisition Number: EZ899-151744/A

MERX I.D. Number: \_\_\_\_\_

SPECIFICATIONS for:

**CASCADE PORT OF ENTRY – Building  
Envelope Remediation**

Project Number: **R.073002.001**

**APPROVED BY:**

[Signature]  
Regional Manager, AES

2014-12-05  
Date

[Signature]  
Construction Safety Coordinator

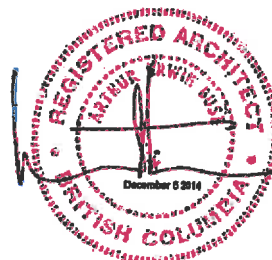
2014-12-05  
Date

**TENDER:**

[Signature]  
Project Manager

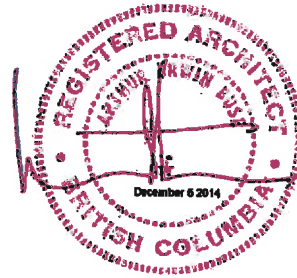
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Date

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### Drawings

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- A200 Site Plan – December 3, 2014.
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## **1 GENERAL**

### **1.01 WORK DESCRIBED BY CONTRACT DOCUMENTS**

- .1 The work of this contract comprises of the building envelope remediation of the Cascade Port of Entry, located at 102 Highway 395 South, Christina Lake, British Columbia.
- .2 Work to be performed under this Contract includes, but is not limited to, the following items covered further in the Contract documents:
  - .1 Building Envelope Remediation:
    - .1 Removal and disposal of existing face seal stucco, coat base and steel mesh, air barrier, flashings and louvres as indicated. Temporary relocation and reinstallation of building signage, existing rainwater leaders, soffit, windows and doors and door frames as required.
    - .2 Investigation of existing wood framing for deterioration as indicated on drawings. Removal and replacement of existing sheathing, vapour barrier and interior gypsum wall board as indicated and as required where deteriorated.
    - .3 Installation of new air barrier, cementitious siding, metal trims and flashings, louvres, wooden window stools and sealant as indicated.
    - .4 Painting of reinstalled rain water leaders, hollow metal doors and frames, interior wood sills and gypsum wall board as indicated.
- .3 CBSA staff will occupy premises during the project period during normal operations of 08:00 to 24:00, 7 days a week. Cooperate with Departmental Representative in scheduling remediation work to minimize conflict with operations and to facilitate usage.

### **1.02 TIME OF COMPLETION**

- .1 Commence work upon notification of acceptance and complete no later than March 31, 2015.

### **1.03 PRICE AND PAYMENT PROCEDURES**

- .1 Payment for Work shall be made at the Unit and Lump Sum Prices for the Items appearing in the Schedule for Lump Sums and Unit Prices.
- .2 Any work for which is not listed as an item in the Schedule of Lump Sum and Unit Prices shall not be paid for separately. No element shall be included in more than one pay item.

### **1.04 MEASUREMENT PROCEDURES**

- .1 Measurement and payment procedures for all necessary materials, labour, equipment and services necessary for carrying out the building envelop remediation work:
  - .1 Interior Gypsum Wall Board Replacement to Exterior Wall (East and West Elevations): Removal and disposal of the first 380mm of gypsum wall board to base of exterior wall. Partial removal of existing batt insulation to review interior face of plywood sheathing. Treatment of stained or mould wood framing. The re-installation and continuous sealing of the existing polyethelene vapour barrier to the bottom of the existing concrete curb. Installation of new 16mm gypsum wall board, tape, finish and paint to match existing wall colour. Clean and re-install 100mm high rubber base to wall. Payment shall be at the Unit Price per linear metre of work installed. Payment shall include the removal, disposal, supply of all material, installation and other expenses incidental to this item of work.

- .2 Exterior Wall Sheathing Replacement (Lower Wall): Removal and disposal of 1200mm high x 2400mm long sections of exterior plywood sheathing (inhibited with mould). Installation of new exterior grade (1200mm high x 2400mm long) sections of exterior plywood sheathing. Payment shall be at the Unit Price per square metre of work installed. Payment shall include the removal, disposal, supply of all material, installation and other expenses incidental to this item of work.
- .3 Exterior Wall Sheathing Replacement (Upper Gable Wall): Removal and disposal of 1200mm high x 2400mm long sections of exterior plywood sheathing (inhibited with mould). Installation of new exterior grade (1200mm high x 2400mm long) sections of exterior plywood sheathing. Payment shall be at the Unit Price per square metre of work installed. Payment shall include the removal, disposal, supply of all material, installation and other expenses incidental to this item of work.
- .4 Any work called for which is not listed as a unit price item shall be paid as a Lump Sum price and include, but is not necessarily limited to mobilization and demobilization, profit and overhead, supervision, and every other work incidental to the building envelope remediation work.

#### **1.05 MINIMUM STANDARDS**

- .1 Work to conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the National Building Code of Canada 2010 (NBC) and applicable Provincial and Municipal codes. In the case of conflict or discrepancy, the most stringent requirement applies.
- .2 Meet or exceed requirements of Contract documents, specified standards, codes and referenced documents.

#### **1.06 CONTRACT DOCUMENTS**

- .1 The Contract documents, drawings and specifications are intended to complement each other, and to provide for and include everything necessary for the completion of the work.
- .2 Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the work.

#### **1.07 DIVISION OF SPECIFICATIONS**

- .1 The specifications are subdivided in accordance with the current 6-digit National Master Specifications System.
- .2 A division may consist of the work of more than one subcontractor. Responsibility for determining which subcontractor provides the labour, material, equipment and services required to complete the work rests solely with the Contractor.
- .3 In the event of discrepancies or conflicts when interpreting the drawings and specifications, the specifications govern.

#### **1.08 TAXES**

- .1 Pay all taxes properly levied by law (including Federal, Provincial, Municipal and Regional District).

## **1.09 REGULATORY REQUIREMENTS**

- .1 Obtain and pay for - Building Permit, Certificates, Licenses and other permits required by regulatory regional district, municipal, provincial or federal authorities to complete the work.
- .2 Provide inspection authorities with plans and information required for issue of acceptance certificates.
- .3 Furnish inspection certificates in evidence that the work installed conforms with the requirements of the authority having jurisdiction.

## **1.10 PROJECT MEETINGS**

- .1 Project meetings in accordance with Section 01 31 19 – Project Meetings.

## **1.11 CONTRACTOR'S USE OF SITE**

- .1 Use of site: in accordance with Section 01 52 00 – Construction Facilities and supplemented as follows:
  - .1 Cascade Port of Entry will remain an active Port of Entry. Canada Border Services Agency (CBSA) has control over the site. All port of entry activities and security controls must remain operational at all times unless otherwise indicated. Coordinate with the Departmental Representative for all activities that impact on-going operations.
  - .2 Work restrictions and security provisions will be enforced.
  - .3 Assume responsibility for assigned premises for laydown and storage areas and for performance of this work.
  - .4 Be responsible for coordination of all work activities on site, including the work of other contractors.
- .2 Perform work in accordance with Contract documents. Ensure work is carried out in accordance with indicated phasing.
  - .1 Existing doors, frames, windows and other openings to be temporarily removed and reinstalled ON SAME DAY so that building is secure when Port of Entry is closed – in accordance with indicated phasing.
    - .1 Contractor to provide temporary plywood hoarding to interior wall during removal of openings and with hoarding removed after openings reinstalled later that day. Refer to Section 01 56 00 – Temporary Barriers and Enclosures.
    - .2 Contractor to temporarily remove and reinstall CBSA furniture which is required in order to complete work. Store as directed by CBSA staff.
- .3 Do not unreasonably encumber site with material or equipment.
- .4 Maintain scaffolding and hoarding throughout duration of work. Do not exceed areas indicated unless written approval by Departmental Representative is provided.
- .5 Execute work with least possible interference or disturbance to normal use. Make arrangements with Departmental Representative to facilitate work as stated.
- .6 Maintain existing services and provide for personnel, visitor and vehicle access.
- .7 Where security is reduced by work, provide temporary means to maintain security. Review measures with Departmental Representative before proceeding.

## **1.12 HOURS OF WORK**

- .1 Hours of work in accordance with Section 01 14 00 – Work Restrictions and supplemented as follows:
  - .1 Hours of work :
    - .1 Contractor may submit work schedule in cooperation with Departmental Representative.
  - .2 Carry out noise generating Work during low volume hours.
    - .1 Low volume hours are Sunday, Monday to Friday between 08:00 - 14:00.
    - .2 Decibel level not to exceed 55 at PIL or Secondary Inspection Areas.
  - .3 Mould remediation work and construction requiring access to building interior in accordance with Section 01 14 00 – Work Restrictions.
- .2 Notify 72 hours in advance to Departmental Representative of all after hours work, including weekends and holidays.

## **1.13 NON SMOKING ENVIRONMENT**

- .1 Smoking is not permitted on site.

## **1.14 WORK SCHEDULE**

- .1 Provide detailed bar chart project schedule within 5 working days of Award of Contract date showing phasing, activity sequencing, interdependencies and duration estimates. Include listed activities as follows:
  - .1 Shop drawings.
  - .2 Samples.
  - .3 Approvals.
  - .4 Procurement.
  - .5 Construction.
  - .6 Installation.
  - .7 Acceptance.
- .2 Do not change approved schedule without notifying Departmental Representative.
- .3 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.
- .4 Schedule Work in consultation with Departmental Representative to minimize impact on public use of facility during operating hours.

## **1.15 SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 – Submittal Procedures:
  - .1 Product Data: Manufacturers catalogue sheets, brochures, literature, performance charts and diagrams.
  - .2 Samples: where requested in technical sections, examples of materials, equipment, quality, finishes and workmanship.
  - .3 Shop Drawings.

#### **1.16 COST BREAKDOWN**

- .1 Before submitting the first progress claim, submit a breakdown of the Contract lump sum prices in detail as directed by the Departmental Representative and aggregating Contract price.

#### **1.17 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each document as follows:
  - .1 Contract Drawings.
  - .2 Contract Specifications.
  - .3 Addenda to Contract Documents.
  - .4 Copy of approved work schedule.
  - .5 Reviewed and approved Shop Drawings.
  - .6 List of Outstanding Shop Drawings.
  - .7 Change Orders.
  - .8 Other Modifications to Contract.
  - .9 As-Built drawings (updated with red marked revisions).
  - .10 Field Test Reports.
  - .11 Reviewed and approved samples.
  - .12 National Building Code, 2010.
  - .13 Health and Safety Plan and Other Safety Related Documents.
  - .14 Other documents as specified.

#### **1.18 HEALTH, SAFETY AND HAZARDOUS MATERIALS**

- .1 Health and Safety Requirements in accordance with Section 01 35 33 – Health and Safety Requirements and Section 02 85 00.01 – Mould Remediation – Minimum Precautions.

#### **1.19 EXAMINATION**

- .1 Examine site and be familiar and conversant with existing conditions likely to affect work.
- .2 Provide photographs of surrounding areas, including existing items not included within project scope but which may be liable to damage or be the subject of subsequent claims.
  - .1 Photographs not to include uniformed staff on duty.

#### **1.20 LOCATION OF EQUIPMENT AND FIXTURES**

- .1 Location of equipment indicated or specified are to be considered as approximate.

#### **1.21 SETTING OUT OF WORK**

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.
- .3 Review existing conditions with contract documents and identify in writing to Departmental Representative of any discrepancies.



## **1.22 ACCEPTANCE OF SUBSTRATES**

- .1 Each trade shall examine surfaces prepared by others and job conditions which may affect his work, and shall report defects to the Contractor. Commencement of work shall imply acceptance of prepared work or substrate surfaces.

## **1.23 QUALITY OF WORK**

- .1 Quality of work in accordance with Section 01 45 00 – Quality Control and supplemented as follows:
  - .1 Ensure that quality workmanship is performed through use of skilled and experienced tradesmen, under supervision of qualified journeyman.
  - .2 The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code Construction Standards.
  - .3 In cases of dispute, decisions as to standard or quality of work rest solely with the Departmental Representative, whose decision is final.

## **1.24 WORKS COORDINATION**

- .1 Coordinate work of subtrades:
  - .1 Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
- .2 Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
  - .1 Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and carrying out their respective work.
  - .2 Coordinate work illustrating potential interference between work of various trades and distribute to affected parties.
    - .1 Pay particularly close attention to overhead work including existing roof.
    - .2 Identify on coordination drawings, building elements and interface requirements.
  - .3 Facilitate meeting and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
  - .4 Publish minutes of each meeting.
  - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submit shop drawings and of rebuilt components only after coordination meeting for such items has taken place.
- .4 Work cooperation:
  - .1 Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of interference.
  - .2 Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, patching and removal or replacement of completed work.
  - .3 Ensure disputes between subcontractors are resolved.
- .5 Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.
- .6 Maintain efficient and continuous supervision. Full-time site superintendent required throughout project.

#### **1.25 APPROVAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

- .1 In accordance with Section 01 33 00 - Submittals Procedures, submit the requested shop drawings, product data, MSDS sheets and samples indicated in each of the technical Sections.
- .2 Allow sufficient time for the following:
  - .1 Review of product data.
  - .2 Approval of shop drawings.
  - .3 Review of re-submission.
  - .4 Ordering of approved material and/or products - refer to technical sections.

#### **1.26 TESTING AND INSPECTIONS (MOULD)**

- .1 Particular requirements for inspection and testing to be carried out by testing service or laboratory approved by the Departmental Representative in accordance with Section 01 29 83 – Payment Procedures for Testing Laboratory Services.
- .2 The Contractor will appoint and pay for the services of testing agency or testing laboratory as specified, and where required for the following:
  - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - .2 Inspection and testing performed exclusively for Contractor's convenience.
    - .1 Tests specified to be carried out by Contractor under the Departmental Representative's supervision.
- .3 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and approved by Departmental Representative.
- .4 Provide Departmental Representative with electronic copies of testing laboratory reports as soon as they are available.

#### **1.27 AS-BUILT DOCUMENTS**

- .1 As Built documents in accordance with Section 01 78 00 – Closeout Submittals and supplemented as follows:
  - .1 The Departmental Representative will provide 1 set of drawings and specifications for "as-built" purposes.
  - .2 As work progresses, maintain accurate records to show all deviations from the Contract documents. Note on as-built specifications, drawings and shop drawings as changes occur.
  - .3 Submit for review copies of red-marked as-built drawings completed to date with each progress claim submission.

#### **1.28 CLEANING**

- .1 Cleaning in accordance with Section 01 74 11 – Cleaning and supplemented as follows:
  - .1 Daily conduct cleaning and disposal operations. Comply with local ordinances and anti-pollution laws.
  - .2 In preparation for interim and final inspections:
    - .1 Examine all sight-exposed exterior surfaced and concealed spaces.
    - .2 Remove dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed exterior finished surfaces, including glass.
  - .3 Use cleaning materials and methods in accordance with instructions of the manufacturer of the surface to be cleaned.

## **1.29 CONTROL**

- .1 Provide protection in accordance with Section 01 56 00 – Temporary Barriers & Enclosures and as follows:
  - .1 Interior Work: temporary dust tight screens and/or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public.
  - .2 Exterior Work: Protect work area with scaffolding structure for work with weather-tight polyethylene film during construction.
  - .3 Maintain and relocate protection until work is complete.
  - .4 Design, erect and maintain hoarding and covered pedestrian walkways to support all loads including windloads and provide protection, complete with signs and electrical lighting as required by authority having jurisdiction and Departmental Representative.

## **1.30 ENVIRONMENTAL PROTECTION**

- .1 Environmental protection in accordance with Section 01 35 43 – Environmental Procedures and supplemented as follows:
  - .1 Prevent extraneous materials from contaminating air beyond construction area within building, by providing temporary extensions to Mechanical intake louvres during work.
  - .2 Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers.
  - .3 Ensure proper disposal procedures in accordance with all applicable provincial regulations.

## **1.31 MAINTENANCE MATERIALS, SPECIAL TOOLS AND SPARE PARTS**

- .1 Specific requirements for maintenance materials, tools and spare parts are specified in individual technical sections.

## **1.32 ADDITIONAL DRAWINGS**

- .1 The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract documents.
- .2 Drawings and specifications will be available electronically. Upon request, Departmental Representative may furnish up to a maximum of six (6) sets of Contract documents for use by the Contractor at no additional cost. Should more than six (6) sets of documents be required the Departmental Representative will provide them at additional cost.

## **1.33 SYSTEM OF MEASUREMENT**

- .1 The metric system of measurement (SI) will be employed on this Contract.

## **1.34 FAMILIARITY WITH SITE**

- .1 Before submitting tender, visit site - as indicated in tender documents and become familiar with all conditions likely to affect the cost of the work.

**1.35 SUBMISSION OF TENDER**

- .1 Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract documents and inspected the site, and is fully conversant with all conditions.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 – Demolition for Minor Works.

### **1.02 ACCESS AND EGRESS**

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

### **1.03 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 as approved by Departmental Representative.
- .4 Contractor responsible for sanitary facilities, refer to Section 01 52 00 – Construction Facilities.
- .5 Closures: protect work temporarily until permanent enclosures are completed.
  - .1 Existing doors, frames, windows and other openings to be temporarily removed and reinstalled ON SAME DAY so that building is secure when Port of Entry closed.
    - .1 Provide temporary hoarding in accordance with Section 01 56 00 – Temporary Barriers and Enclosures.

### **1.04 HOURS OF WORK**

- .1 The Port of Entry is operational from 08:00 to 24:00, 7 days a week. Contractor may set his own schedule of work onsite, within restrictions specified. Submit proposed hours-of-work to Departmental Representative for review and approval with Work in accordance with Section 01 11 55 – General Instructions.
- .2 Disruptive construction noise and operations may require work to be executed during low Port of Entry volume periods. Low volume hours are Sundays and Monday to Friday between 08:00 – 14:00.
- .3 All construction activity requiring access to the interior of the buildings, such as gypsum wall board repair and associate work, connections for power, data, communications and security, must be executed Monday through Friday between 09:00 and 14:00 hours. Should there be need for interruption to operational equipment, Contractor shall give one 72 hours notice to Departmental Representative. Request shall be subject to CBSA approval of date and time, and may require that said work be completed outside of normal working hours.
- .4 All hazardous material remediation work to be completed after normal operation hours when Port of Entry is closed.

#### **1.05 ALTERATIONS AND REPAIRS TO EXISTING BUILDING**

- .1 Execute work with least possible interference or disturbance to building operations occupants, public and normal use of premises.
- .2 Maintain existing services and abide by regulations for personnel and vehicle access.
- .3 Closures: protect work temporarily until project is complete.
- .4 Protect existing metal roof during demolition and completion of Work. Provide protective sheathing to roof. Repair or make good to better condition any damage to existing roof.
- .5 Condensing units to remain operational and free from debris.
- .6 Any work which impacts the operations onsite (traffic, commercial, support staff, etc.) must have one (1) week notice and must be approved by CBSA. CBSA withholds the right to have work completed at low volume periods.
- .7 Five (5) parking stalls will be allocated to the Contractor in the visitor's parking lot. Work truck will be allowed to be located in the Contractor's laydown area. Do not occupy any other parking areas without the approval of the Departmental Representative.
- .8 Construction crews are not permitted to use existing facility washrooms. Refer to Section 01 51 00 – Temporary Utilities.

#### **1.06 EXISTING SERVICES**

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where work involves breaking into or connecting to existing services, give Departmental Representative one (1) week notice for permission. The maximum number of shut-down periods, is limited to four (4) for duration of the project.
- .3 Contractor will be held responsible for damages to facility equipment as the result of service shut-downs.
- .4 Contractor will be held responsible for unscheduled shut-downs of building utilities and services.
- .5 Contractor will not be allowed to connect to CBSA existing data and communication services for his own use.

#### **1.07 SPECIAL REQUIREMENTS**

- .1 Traffic lane closures:
  - .1 Request for lane closure requires a minimum of seven (7) working days notice and must be approved by Departmental Representative. During lane closure, provide wayfinding signage for pedestrian and vehicular traffic.
- .2 Security Cameras:
  - .1 Security cameras to be remain operational. Cameras requiring temporary relocation to be serviced by Departmental Representative approved contractor.
- .3 Communication Antennae:

- .1 Communication antennae to remain operational. Antennae requiring temporary relocation to be serviced by Departmental Representative approved contractor.
- .4 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .5 Keep within limits of work and avenues of ingress and egress.
- .6 Noise Generation:
  - .1 Means and procedures of controlling and isolating other excessive or disturbing noise and vibration affecting occupied areas shall be the responsibility of the Contractor and approved by the Departmental Representative and CBSA.

#### **1.08 SECURITY**

- .1 Obey the following CBSA Security Directives:
  - .1 Security protocol to be determined on site with CBSA Operations Staff.
  - .2 Contractor's personnel required to complete daily sign-in sheet.
- .2 Contractor's personnel shall be in possession of Government issued picture identification at all times while on CBSA property.
- .3 Remain within the designated work areas. Movement within CBSA restricted areas must be approved and may require to be escorted by CBSA staff.
- .4 Do not interfere with Port of Entry inspection processes. Move away from CBSA officials interacting with the travelling public to avoid overhearing potentially sensitive and personal conversations.
- .5 Be accountable for tools/equipment at all times. Do not leave tools unattended and/or within reach of the travelling public.
- .6 Act professionally at all times. No foul language or rude behavior.
- .7 Do not interact with the travelling public, unless authorized to do so where required.
- .8 Obey uniformed CBSA officers when given operational directives (these may include being instructed to move off site during a dangerous situation or to stop work because of operational requirements. Report to the Departmental Representative when such instructions have been given, as early as is convenient). Do not take directions from uniformed officers of PWGSC building maintenance regarding project construction issues.
- .9 Security escort:
  - .1 CBSA escort will be provided and paid by CBSA for access to site after normal hours of operation. Give CBSA staff and Departmental Representative 72 hours notice.

#### **1.09 BUILDING SMOKING ENVIRONMENT**

- .1 Smoking is not permitted on-site.

#### **2 PRODUCTS**

##### **2.01 NOT USED**

- .1 Not Used.



**3 EXECUTION**

**3.01 NOT USED**

.1 Not Used.

**END OF SECTION**

December 3, 20

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## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative as relating to hazardous materials (mould).

### **1.02 APPOINTMENT AND PAYMENT**

- .1 Contractor to pay for testing services as follows:
  - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - .2 Inspection and testing performed exclusively for Contractor's convenience.
  - .3 Tests specified to be carried out by Contractor under supervision of Departmental Representative.

### **1.03 CONTRACTOR'S RESPONSIBILITIES**

- .1 Provide labour, equipment and facilities to:
  - .1 Provide access to Work for review, inspection and testing.
  - .2 Facilitate inspections and tests.
  - .3 Make good Work disturbed by inspection and test.
  - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Departmental Representative 72 hours minimum sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 ADMINISTRATIVE**

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times, recording and distributing meeting minutes.
- .2 Attend project meetings throughout the progress of the work at the call of Departmental Representative.
- .3 Provide physical space and make arrangements for meetings. Contractor site trailer size to accommodate entire project team and Owner's Representatives (to be located within Contractor laydown area).
- .4 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

### **1.02 PRECONSTRUCTION MEETING**

- .1 Within ten (10) days after award of Contract, Departmental Representative will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Departmental Representative, Contractor, major Subcontractors, field reviewers and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
  - .1 Appointment of official representative of participants in the Work.
  - .2 Schedule of Work: in accordance with Section 01 11 55 – General Instructions.
  - .3 Schedule of submission of shop drawings and samples. 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 Record drawings in accordance with Section 01 78 00 - Closeout Submittals.
  - .9 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
  - .10 Monthly progress claims, administrative procedures, photographs, hold backs.
  - .11 Appointment of inspection firms.
  - .12 Insurances, transcript of policies.

### **1.03 PROGRESS MEETINGS**

- .1 During course of Work and up to project completion, schedule progress meetings (physical meetings or conference calls) every two weeks. Additional meetings will be scheduled to resolve extraordinary issues as required.
- .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .3 Notify parties minimum three (3) days prior to meetings.
- .4 Departmental Representative will record minutes of meetings and circulate to attending parties and affected parties not in attendance.
- .5 Agenda to include the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.
  - .3 Field observations, problems, conflicts.
  - .4 Problems which impede construction schedule.
  - .5 Review of off-site fabrication delivery schedules.
  - .6 Corrective measures and procedures to regain projected schedule.
  - .7 Revision to construction schedule.
  - .8 Progress schedule, during succeeding work period.
  - .9 Review submittal schedules: expedite as required.
  - .10 Maintenance of quality standards.
  - .11 Review proposed changes for affect on construction schedule and on completion date.
  - .12 Other business.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 07 27 60 – Air Barrier.
- .2 Section 07 46 10 – Fiber Cementitious Siding.
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .4 Section 07 92 00 – Joint Sealants.
- .5 Section 08 01 11 – Metal Doors and Frames Replacement.
- .6 Section 08 01 50 – Window Replacement.
- .7 Section 08 90 00 – Louvres and Vents.
- .8 Section 09 91 99 – Painting for Minor Works.

### **1.02 APPROVALS**

- .1 Approval of shop drawings and sample: refer to Section 01 11 55 – General Instructions.

### **1.03 ADMINISTRATIVE**

- .1 This Section specifies the general requirements and procedures for the Contractor's submissions of shop drawings, product data, samples and other requested submittals to Departmental Representative for review. Additional specific requirements for submissions are specified in individual technical sections.
- .2 Prepare Schedule of Submittals within 10 days of contract award with name of each submittal and date of submittal.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units. Where items or information is not produced in SI Metric units converted values are acceptable.
- .4 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .5 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review unless Departmental Representative gives written acceptance of specific deviations.
- .7 Make any changes in submissions which Departmental Representative may require consistent with Contract documents and resubmit as directed by Departmental Representative.
- .8 Notify Departmental Representative in writing, when resubmitting, of any revisions other than those requested by Departmental Representative.

- .9 Do not proceed with work or order construction materials or products until relevant submissions are reviewed and approved by the Departmental Representative.
- .10 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. **Submittals not reviewed, marked up for on-site coordination, stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.**
- .11 Project schedule will not be extended due to Consultant re-review of resubmitted shop drawing submittals.
- .12 Verify field measurements and affected adjacent Work are coordinated.
- .13 Keep one reviewed copy of each reviewed submittal on site.

#### **1.04 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, samples, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Where indicated, submit drawings stamped and signed by professional engineer registered or licensed in the Province of British Columbia, Canada.
- .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 coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow seven (7) business days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 No materials to be ordered and no work to be fabricated until shop drawings and other related submittals have been reviewed.
- .8 Accompany submissions with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Shop drawing description.
  - .5 Identification and quantity of each shop drawing, product data and sample.
  - .6 Other pertinent data.

- .9 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 Overall key plan, plans, elevations, sections and details for all work submitted.
    - .3 Layout, showing dimensions, including identified field dimensions, clearances, thicknesses, finishes and location of all services.
    - .4 Typical and special installation conditions, including setting or erection details.
    - .5 Material being supplied, all connections, attachments, anchorages and locations of exposed fastenings as applicable.
    - .6 Capacities.
    - .7 Performance characteristics.
    - .8 Standards.
    - .9 Operating weight.
    - .10 Wiring diagrams.
    - .11 Single line and schematic diagrams.
    - .12 Relationship to adjacent work.
    - .13 Copy of associated project warranty.
- .10 After Departmental Representative's written review, distribute copies.
- .11 Submit electronic copy of shop drawings for all required shop drawings with supporting documents and as Departmental Representative may reasonably request.
- .12 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .13 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .14 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .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.
- .15 Submit electronic copies of manufacturers' instructions for requirements requested in specification Sections and as requested by Departmental Representative.



- .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.
- .16 Submit electronic copies of Manufacturer's Field Reports for requirements requested in technical sections and as requested by Departmental Representative.
- .17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .18 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative as relating to warranties.
- .19 Delete information not applicable to project.
- .20 Supplement standard information to provide details applicable to project.
- .21 If upon review by Departmental Representative, 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, require revision or supplemental submittals as noted, copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above **with all revisions clearly clouded**, must be performed before fabrication and installation of Work may proceed.

#### **1.05 SAMPLES**

- .1 Submit for review samples in duplicate as requested in individual technical specification Sections. Label samples with origin and intended use. One sample will be returned with Shop Drawing Review.
- .2 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .3 Where colour, pattern or texture is criterion, submit full range of samples.
- .4 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to ordering materials or proceeding with Work.
- .5 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.

#### **1.06 MOCK-UPS**

- .1 Erect mock-ups where directed by Departmental Representative and in accordance with Section 01 45 00 - Quality Control. Mock-up may remain as part of Work once reviewed and accepted.

#### **1.07 PROGRESS SCHEDULE**

- .1 Submit work schedule and cost breakdown and as-built drawings to date in accordance with Section 01 11 55 – General Instructions.

**1.08 INSPECTION REPORTS**

- .1 Submit in duplicate test results and inspection reports where indicated.

**1.09 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution, monthly with progress statement and as directed by Departmental Representative.
- .2 Project identification: name and number of project, building name and elevation with date of exposure indicated.
- .3 Number of viewpoints: 4 locations.
  - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: as directed by Departmental Representative.
  - .1 Before concealment of Work and as directed by Departmental Representative.

**1.10 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 – Demolition for Minor Works.

### **1.02 REFERENCES**

- .1 Manual of Uniform Traffic Control Devices for Streets and Highways (UTCD), 2009.

### **1.03 PROTECTION OF PUBLIC TRAFFIC**

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
  - .1 Place equipment in position to minimize interference and hazard to travelling public.
  - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
  - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close PIL lanes without approval of Departmental Representative seven (7) working days required. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD. Refer to Section 01 14 00 - Work Restrictions for further restrictions.
- .4 As directed by Departmental Representative, provide lane detours to facilitate passage of traffic around restricted construction area.

### **1.04 INFORMATIONAL AND WARNING DEVICES**

- .1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices of UTCD manual.
- .3 Place signs and other devices in locations recommended in UTCD Manual.
- .4 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.
- .5 Continually maintain traffic control devices in use:
  - .1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
  - .2 Remove or cover signs which do not apply to conditions existing from day to day.

### **1.05 CONTROL OF PUBLIC TRAFFIC**

- .1 Provide competent flag personnel, trained in accordance with, and properly equipped to as specified in UTCD manual in following situations:

- .1 Where temporary protection is required while other traffic control devices are being erected or taken down.
- .2 For emergency protection when other traffic control devices are not readily available.
- .3 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCES**

- .1 Government of Canada
  - .1 Canada Labour Code, Part 2.
  - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC) 2010
  - .1 Part 8 – Safety Measures at Construction and Demolition Sites.
- .3 Canadian Standards Association (CSA) as amended:
  - .1 CSA Z797-2009 Code of Practice for Access Scaffold.
  - .2 CSA S269.1-1975 (R2003) Falsework for Construction Purposes.
  - .3 CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures.
- .4 Fire Protection Engineering Services, HRSDC:
  - .1 FCC No. 301, Standard for Construction Operations.
  - .2 FCC No. 302, Standard for Welding and Cutting.
- .5 American National Standards Institute (ANSI):
  - .1 ANSI A10.3 Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .6 Province of British Columbia
  - .1 Workers Compensation Act Part 3 – Occupational Health and Safety, RSBC 1996 - Updated 2006.
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).

### **1.02 RELATED SECTIONS**

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 85 00.01 – Mould Removal/Remediation – Minimum Precautions.

### **1.03 WORKER'S COMPENSATION BOARD COVERAGE**

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.
- .3 Submit copies of WCB Clearance Letter and WCB Contractor Rating. Submit copy of Final WCB Clearance Letter at completion of project.

### **1.04 COMPLIANCE WITH REGULATIONS**

- .1 PWGSC may terminate the Contract without liability to PWGSC where the Contractor, in the opinion of PWGSC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.

- .2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

#### **1.05 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit to Departmental Representative, submittals in accordance with Section 01 33 00 - Submittal Procedures. Work affected by submittal shall not proceed until review is complete.
- .2 Submit the following:
  - .1 Health and Safety Plan.
    - .1 Submit 2 copies of the Contractor's generic Health and Safety Plan and 2 copies of the site-specific Health and Safety Plan within 5 days after date of Notice to Proceed and prior to commencement of Work. Site-specific Plan must include the results of the site specific safety hazard assessment, and the results of the safety, health and hazard analysis for the site tasks as described in the Work plan, and proposed mitigations for the identified hazards.
  - .2 Copies of work site health and safety meeting minutes, inspection reports, reports or directions issued by Federal, Provincial or Municipal health and safety inspectors, incident and accident reports, and follow-up reports.
  - .3 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
  - .4 Emergency Procedures.
  - .5 Copies of WCB Clearance Letter and WCB Contractor Rating. Submit copy of Final WCB Clearance Letter at completion of project.
  - .6 Submit letter stating that Contractor assumes the role of Prime Contractor for the purposes of site safety responsibility and the Workers Compensation Act.
- .3 The Departmental Representative will review Contractor's site-specific Health and Safety Plan and emergency procedures and provide comments to Contractor within seven (7) business days after receipt of plan. Revise plan as appropriate and resubmit to Departmental Representative.
- .4 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .5 Submission and resubmission of the Health and Safety Plan and any revised version to the Departmental Representative is for information and reference purposes only. It shall not:
  - .1 Be construed to imply approval by the Departmental Representative.
  - .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.
  - .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

#### **1.06 RESPONSIBILITY**

- .1 Assume responsibility as the Prime Contractor for work under this contract.

- .2 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.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

#### **1.07 GENERAL CONDITIONS**

- .1 Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
  - .1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.
  - .2 Secure site at night time or provide security guard as deemed necessary to protect site against entry.

#### **1.08 REGULATORY REQUIREMENTS**

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.
- .2 In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

#### **1.09 WORK PERMITS**

- .1 Obtain and pay for specialty permits related to project before start of work.

#### **1.10 FILING OF NOTICE**

- .1 The Contractor is to complete and submit a Notice of Project as required by provincial authorities.
- .2 Provide copies of all notices to the Departmental Representative.

#### **1.11 HEALTH AND SAFETY PLAN**

- .1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.
- .2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including but not limited to, the following:
  - .1 Primary requirements:
    - .1 Contractor's safety policy.
    - .2 Identification of applicable compliance obligations.
    - .3 Definition of responsibilities for project safety/organization chart for project.
    - .4 General safety rules for project.
    - .5 Job-specific safe work, procedures.
    - .6 Inspection policy and procedures.



- .7 Incident reporting and investigation policy and procedures.
    - .8 Occupational Health and Safety Committee/Representative procedures.
    - .9 Occupational Health and Safety meetings.
    - .10 Occupational Health and Safety communications and record keeping procedures.
  - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
  - .3 List hazardous materials to be brought on site as required by work.
  - .4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
  - .5 Identify personal protective equipment (PPE) to be used by workers.
  - .6 Identify personnel and alternates responsible for site safety and health.
  - .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
- .4 Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.
- .5 Departmental Representative's review: the review of Health and Safety Plan by Public Works and Government Services Canada (PWGSC) shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

#### **1.12 EMERGENCY PROCEDURES**

- .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:
- .1 Designated personnel from own company.
  - .2 Regulatory agencies applicable to work and as per legislated regulations.
  - .3 Local emergency resources.
  - .4 Departmental Representative and site staff.
- .2 Include the following provisions in the emergency procedures:
- .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
  - .2 Evacuate all workers safely.
  - .3 Check and confirm the safe evacuation of all workers.
  - .4 Notify the fire department or other emergency responders.
  - .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
  - .6 Notify Departmental Representative and site staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
- .1 Work at high angles.
  - .2 Work in confined spaces or where there is a risk of entrapment.
  - .3 Work with hazardous substances.
  - .4 Underground work.
  - .5 Work on, over, under and adjacent to water.
  - .6 Workplaces where there are persons who require physical assistance to be moved.

- .4 Design and mark emergency exit routes to provide quick and unimpeded exit.
- .5 Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

#### **1.13 HAZARDOUS MATERIALS**

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials; regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.
- .2 Where use of hazardous and toxic products cannot be avoided:
  - .1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as per Section 01 33 00 - Submittal Procedures.
  - .2 In conjunction with Departmental Representative, schedule to carry out work during "off hours" when tenants have left the building. Give the Departmental Representative 48 hours notice for work involving hazardous substances (Canada Labour Code, Part II, Section 10), and before caulking.
  - .3 Provide adequate means of ventilation in accordance with Section 01 51 00 - Temporary Utilities.
- .3 Work at site may involve contact with mould-containing gypsum wall board sheathing. Take appropriate precautions.

#### **1.14 ELECTRICAL SAFETY REQUIREMENTS**

- .1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.
  - .1 Before undertaking any work, coordinate required energizing and de-energizing of new and existing circuits with Departmental Representative.
  - .2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

#### **1.15 ELECTRICAL LOCKOUT**

- .1 Develop, implement and enforce use of established procedures to provide lockout and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.
- .2 Prepare the lockout procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request/authorization form. Have procedures available for review upon request by the Departmental Representative.
- .3 Keep the documents and lockout tags at the site and list in a log book for the full duration of the Contract. Upon request, make such data available for viewing by Departmental Representative or by any authorized safety representative.

#### **1.16 OVERLOADING**

- .1 Ensure no part of work is subjected to a load which will endanger its safety or will cause permanent deformation or damage.

#### **1.17 SCAFFOLDING**

- .1 Design, construct and maintain scaffolding in a rigid, secure and safe manner, in accordance with CSA Z797 and B.C. Occupational Health and Safety Regulations.

#### **1.18 CONFINED SPACES**

- .1 Carry out work in confined spaces in compliance with Provincial regulations - Occupational Health and Safety Regulation, Part 9.

#### **1.19 POWDER-ACTUATED DEVICES**

- .1 Use powder-actuated devices in accordance with ANSI A10.3 only after receipt of written permission from the Departmental Representative.

#### **1.20 FIRE SAFETY REQUIREMENTS**

- .1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

#### **1.21 FIRE PROTECTION AND ALARM SYSTEM**

- .1 Fire protection and alarm systems shall not be:
  - .1 Obstructed.
  - .2 Shut off.
  - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Be responsible / liable for costs incurred from the fire department, the building owner and tenants resulting from false alarms.

#### **1.22 UNFORESEEN HAZARDS**

- .1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

#### **1.23 POSTED DOCUMENTS**

- .1 Post legible versions of the following documents on site:
  - .1 Health and Safety Plan.
  - .2 Sequence of work.
  - .3 Emergency procedures.
  - .4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
  - .5 Notice of Project.
  - .6 Floor plans or site plans.
  - .7 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
  - .8 Workplace Hazardous Materials Information System (WHMIS) documents.
  - .9 Material Safety Data Sheets (MSDS).

- .10 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
- .2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.
- .3 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

#### **1.24 MEETINGS**

- .1 **Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.**

#### **1.25 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.
- .3 The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order".

### **2 PRODUCTS**

#### **2.01 NOT USED**

- .1 Not used.

### **3 EXECUTION**

#### **3.01 NOT USED**

- .1 Not used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED SECTIONS**

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 85 00.01 - Mould Removal/Remediation – Minimum Precautions.

### **1.02 REFERENCES**

- .1 Definitions:
  - .1 Environmental Pollution and Damage: presence of chemical, Physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
  - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- .2 Reference Standards:
  - .1 U.S. Environmental Protection Agency (EPA)/Office of Water
    - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.

### **1.03 FIRES**

- .1 Fires and burning of rubbish on site not permitted.

### **1.04 POLLUTION CONTROL**

- .1 Control emissions from equipment and plant to local authorities' emission requirements.
- .2 Prevent extraneous materials from contaminating air and waterways beyond application area.
  - .1 Provide temporary enclosures.

### **1.05 NOTIFICATION**

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
  - .1 Do not take action until after receipt of written approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.01 CLEANING**

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling.
- .3 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RECORD OF PROGRESS**

- .1 Before project start, photograph project site and existing conditions in accordance with Section 01 11 55 – General Instructions and Section 01 33 00 – Submittal Procedures.

### **1.02 INSPECTION**

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Testing and inspections in accordance with Section 01 11 55 – General Instructions.

### **1.03 INDEPENDENT INSPECTION AGENCIES**

- .1 Where required, independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

### **1.04 ACCESS TO WORK**

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

### **1.05 PROCEDURES**

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for reviews or tests, in order that attendance arrangements can be made.
- .2 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

### **1.06 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.



- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

#### **1.07 REPORTS**

- .1 Submit electronic copy of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

#### **1.08 MOCK-UPS**

- .1 Prepare mock-ups for Work specifically requested in technical specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct in locations acceptable to Departmental Representative.
- .3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work. Submit colour photos of mock-up to Departmental Representative allowing 72 hours notice for review.
- .4 Failure to prepare mock-ups 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. Submit digital images of mock-up to Departmental Representative for review.
- .5 Mock-ups once accepted may remain as part of Work.

### **2 PRODUCTS**

#### **2.01 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCES**

- .1 Canadian Standards Association (CSA) as amended:
  - .1 CAN/CSA Z321-96(R2001), Signs and Symbols for the Occupational Environment.

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

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

### **1.03 ACCESS AND DELIVERY**

- .1 CBSA Operations Staff to designate permitted Contractor access door for interior work.
  - .1 Maintain for duration of Contract.
  - .2 Make good damage resulting from Contractor's use.
- .2 Use of facilities will be granted to the Contractor by reservation through the Departmental Representative.
  - .1 Limited parking is permitted as directed by Departmental Representative. Security has been instructed to have unauthorized vehicles towed at the Contractor's expense. Refer to Section 01 14 00 – Work Restrictions.

### **1.04 STORAGE FACILITIES**

- .1 Storage space will be provided as directed by Departmental Representative.

### **1.05 WATER**

- .1 Water supply is available at existing building and may be used for construction purposes at no cost.
  - .1 Hose bib location as indicated.

### **1.06 POWER**

- .1 Electrical power and lighting at existing buildings may be used for construction purposes at no extra cost, provided that warranties are not affected thereby and electrical components used for temporary power are replaced when damaged. Do not use emergency power or UPS panels for this purpose.
  - .1 Power located as directed by Departmental Representative.

### **1.07 HEATING AND VENTILATION**

- .1 Do not begin work until arrangements have been made with the Departmental Representative for Contractor supplied protection of heating, ventilating and air-conditioning (temporary removal of existing exterior vents or louvres).
  - .1 If there is any dirt or dust in the heating and ventilating system, it will be the Contractor's responsibility to return to its original state in accordance with the Departmental Representative's specifications.
- .2 Prevent dust and odour migration to occupied areas.
  - .1 Do not deactivate HVAC system.

**1.08 TEMPORARY COMMUNICATION FACILITIES**

- .1 Provide and pay for temporary telephone, fax, data hook up, lines and equipment necessary for own use and use of Departmental Representative.

**1.09 SANITARY FACILITIES**

- .1 Contractor to provide sanitary facilities. Locate where directed by Departmental Representative and keep clean.

**1.10 SCAFFOLDING**

- .1 Construct and maintain scaffolding in rigid, secure and safe manner in accordance with Section 01 52 00 – Construction Facilities.
- .2 Erect scaffolding independent of walls. Remove promptly when no longer required.

**1.11 REMOVAL OF TEMPORARY FACILITIES**

- .1 Remove temporary facilities from site when directed by the Departmental Representative.

**1.12 SIGNS AND NOTICES**

- .1 Signs and notices for safety and instruction are permitted and shall be in both official languages or graphic symbols conforming to CAN/CSA-Z321.
- .2 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or when directed by Departmental Representative.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED.**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCES**

- .1 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
  - .2 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

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

### **1.03 INSTALLATION AND REMOVAL**

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be 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.

### **1.04 SCAFFOLDING**

- .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ladders, platforms and temporary stairs.

### **1.05 BARRIERS AND ENCLOSURES**

- .1 In accordance with Section 01 56 00 – Temporary Barriers and Enclosures.

### **1.06 HOISTING**

- .1 As required, provide, operate and maintain hoists for construction and cranes for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists and cranes to be operated by qualified operator.

### **1.07 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.

### **1.08 CONSTRUCTION PARKING**

- .1 Limited parking will be permitted on site as directed by Departmental Representative. Provide for additional parking off site. Refer to 01 14 00 – Work Restrictions.

- .2 Provide and maintain adequate access to project site.

#### **1.09 SECURITY**

- .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

#### **1.10 OFFICES**

- .1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.

#### **1.11 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 not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

#### **1.12 SANITARY FACILITIES**

- .1 Provide sanitary facilities within Contractor Laydown Area 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.

#### **1.13 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Refer to Section 01 14 00 – Work Restrictions.
- .2 Provide access as necessary to maintain traffic.
- .3 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .4 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .5 Protect travelling public from damage to person and property.
- .6 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .8 Dust control: adequate to ensure safe operation at all times.
- .9 Provide snow removal where required to complete Work. Dispose where directed by CBSA Operations Staff for CBSA removal from site.

**1.14 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 Store materials resulting from demolition activities that are salvageable, where directed by Departmental Representative.
- .4 Stack stored new or salvaged material not in construction facilities.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED.**

- .1 Not Used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 85 00.01 – Mould Removal/Remediation – Minimum Precautions.

### **1.02 REFERENCES**

- .1 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978(R2003), Douglas Fir Plywood.

### **1.03 INSTALLATION AND REMOVAL**

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

### **1.04 HOARDING FENCING (CONTRACTOR LAYDOWN)**

- .1 Erect temporary Contractor Laydown Area enclosures using 1.8 self-supporting metal fence.
- .2 Provide one lockable truck entrance gate and at least one pedestrian door. Equip gates with locks and keys.
- .3 Provide barriers around trees and plants where remediation work occurs. Protect from damage by equipment and construction procedures.

### **1.05 HOARDING (EXTERIOR)**

- .1 Existing doors, frames, windows and other openings to be temporarily removed and reinstalled ON SAME DAY so that building is secure when site closed. Contractor to provide temporary plywood hoarding to interior wall during removal of openings and with hoarding removed after openings reinstalled later that day.
  - .1 Interior hoarding during window and door frame removal for cementitious siding installation to be weathertight to exterior providing maximum protection from heat loss. Depth, width and height as required for Contractor to complete work. Fastening method to be approved by Departmental Representative.
- .2 Erect temporary building envelope enclosures to protect wall assemblies from elements during Work.
- .3 Erect and maintain pedestrian walkways and exits including roof and side covers, complete with signs and electrical lighting as required by law.
- .4 Protect site from damage by equipment and construction procedures.



**1.06 WEATHER ENCLOSURES**

- .1 Provide weather tight closures to unfinished remediated wall assemblies and other openings in exterior walls including existing vents, louvres, lighting and security cameras while temporarily removed.
- .2 Design enclosures to withstand wind pressure and snow loading.

**1.07 DUST TIGHT SCREENS (INTERIOR)**

- .1 When completing interior work, provide dust tight screens or 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.

**1.08 GUARD RAILS AND BARRICADES**

- .1 Provide as required by governing authorities.

**1.09 ACCESS TO SITE**

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

**1.10 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain barricades as required to perform Work and protect public.

**1.11 FIRE ROUTES**

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

**1.12 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding property from damage during performance of Work.
- .2 Be responsible for damage incurred.

**1.13 PROTECTION OF BUILDING FINISHES**

- .1 Provide protection for finished and partially finished building finishes and equipment, including existing roof coverings, as indicated during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule three (3) days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

**1.14 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling.

**2 PRODUCTS**

**2.01 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

.1 Not Used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 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, Departmental Representative 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.

### **1.02 PRODUCTS, MATERIALS AND EQUIPMENT**

- .1 Products, materials, equipment and articles incorporated in Work shall be NEW, not damaged or defective, and of best quality for purpose intended and compatible with the specifications. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Use products of one (1) manufacturer for material and equipment of the same type or classification unless otherwise specified.
- .3 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .4 Notify Departmental Representative in writing of any conflict between these specifications and manufacturer's instructions. Departmental Representative will designate which document is to be followed.

### **1.03 AVAILABILITY**

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items.
- .2 If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .3 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

### **1.04 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 sheet materials on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

#### **1.05 TRANSPORTATION**

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

#### **1.06 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 Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

#### **1.07 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 Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves 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 Departmental Representative, whose decision is final.

#### **1.08 COORDINATION**

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

#### **1.09 REMEDIAL WORK**

- .1 Refer to Section 01 73 00 – Execution.
- .2 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .3 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

#### **1.10 FASTENINGS**

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Provide metal fastenings and accessories in the same texture, colour and finish as base metal in which they occur.
  - .1 Prevent electrolytic action between dissimilar metals.
  - .2 Use non-corrosive fasteners, anchors and spacers for securing exterior metal work unless stainless steel or other material is specifically requested in technical specification sections.
  - .3 Use heavy hexagon heads, semi-finished unless otherwise specified.
  - .4 Bolts may not project more than 1 diameter beyond bolts.
- .3 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.
- .4 Prevent damage, adulteration and soiling of products during delivery, handling and storage. Immediately remove rejected products from site.
- .5 Store products in accordance with suppliers' instructions.
- .6 Touch up damaged factory finished surfaces according to manufacturer's recommendations and to Departmental Representative's satisfaction.
  - .1 Use primer or enamel to match original.
  - .2 Do not paint over nameplates.
- .7 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.
- .8 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .9 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

#### **1.11 PROTECTION OF EXISTING BUILDING AND WORK IN PROGRESS**

- .1 Protect existing building components and finishes (including frames, glazing and roof finishes) from damage. Repair damaged components and finishes according to Departmental Representative's specifications, to better condition.
- .2 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

#### **1.12 CONTRACTOR'S OPTIONS FOR SELECTION OF PRODUCTS FOR TENDERING**

- .1 Products are specified by 'Prescriptive' methods: select any product meeting or exceeding specifications.
- .2 Products specified under "Acceptable Products": select any one of the indicated manufacturers or any other manufacturer meeting or exceeding the Prescriptive specifications and indicated Products.
- .3 Products specified by performance and referenced standard: select any product meeting or exceeding the referenced standard.

- .4 Products specified to meet particular design requirements or to match existing materials: use only material specified Acceptable Product. Alternative products may be considered provided full technical data is received in writing by Departmental Representative in accordance with Section 01 11 55 – General Conditions.
- .5 When products are specified by a referenced standard or by or performance specifications, upon request of Departmental Representative obtain from manufacturer an independent laboratory report showing that the product meets or exceeds the specified requirements at no cost to Departmental Representative.
- .6 Provide cost saving breakout in bid form for alternate material or system if incorporated.

#### **1.13 SUBSTITUTION AFTER CONTRACT AWARD**

- .1 No substitutions are permitted without prior written approval of the Departmental Representative.
- .2 Proposals for substitution may only be submitted after Contract award. Such request must include statements of respective costs of items originally specified and the proposed substitution, including cut sheets and technical data.
- .3 Proposals will be considered by the Departmental Representative if:
  - .1 Products selected by tenderer from those specified are not available;
  - .2 Delivery date of products selected from those specified would unduly delay completion of Contract, or
  - .3 Alternative product to that specified, which is brought to the attention of and considered by Departmental Representative as equivalent to the product specified, and will result in a credit to the Contract amount.
- .4 Should the proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on the project. Pay for design or drawing changes required as result of substitution.
- .5 Amounts of all credits arising from approval of the substitutions will be determined by the Departmental Representative and the Contract price will be reduced accordingly.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 85 00.01 – Mould Removal/Remediation – Minimum Precautions
- .3 Section 06 08 99 – Rough Carpentry for Minor Works.
- .4 Section 06 20 00 – Finish Carpentry.
- .5 Section 07 27 60 – Air Barrier.
- .6 Section 07 46 10 – Fiber Cementitious Siding.
- .7 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .8 Section 07 92 00 – Joint Sealants.
- .9 Section 08 01 11 – Metal Doors and Frames Replacement.
- .10 Section 08 01 50 – Window Replacement.
- .11 Section 09 91 99 – Painting for Minor Works.

### **1.02 ACTION AND INFORMATIONAL 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.
  - .4 Visual qualities of sight-exposed elements.
  - .5 Work of Departmental Representative 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 Departmental Representative or separate contractor.
  - .7 Written permission of affected separate contractor.
  - .8 Date and time work will be executed.

### **1.03 MATERIALS**

- .1 Required for original installation.

### **1.04 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 and review existing conditions with Departmental Representative.
- .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.

**1.05 EXECUTION**

- .1 Execute cutting, fitting, and patching to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover prematurely installed Work as required to complete Work in correct construction sequence.
- .4 Remove and replace defective and non-conforming Work.
- .5 Provide openings in non-structural elements of Work for penetrations of existing 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 Contractor to employ Departmental Representative approved contractor to remove, relocate and reinstall existing security cameras, communication antennae, existing air source heat pump and any other equipment.
- .8 Restore work with new products in accordance with requirements of Contract Documents.
- .9 Fit Work airtight to pipes, sleeves, ducts, conduit, louvres and other penetrations through surfaces.

**1.06 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 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 Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice where required to complete Work and store where directed by CBSA Operations Staff.
- .4 Make arrangements with and obtain and pay for permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling.
- .7 Dispose of waste materials and debris off site.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .11 Schedule cleaning operations so that resulting dust, debris and other contaminants will not contaminate building systems.

### **1.02 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 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 Vacuum clean interior floors where Work has taken place and behind grilles, louvres and screens. Wipe clean all walls, sills, doors and frames and adjacent surfaces where work has taken place.
- .6 Remove construction debris from roof and repair damage to as good or better condition.
- .7 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

- .8 Broom clean and wash exterior walks, steps and surfaces; where used for project Work.
- .9 Remove dirt and other disfiguration from exterior surfaces of Work.
- .10 Clean equipment and fixtures to sanitary condition; clean glazing and frames where adjacent to work.

**1.03 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Refer to technical sections for waste management and disposal.

### **1.02 WASTE MANAGEMENT GOALS**

- .1 Prior to start of Work, conduct meeting with Departmental Representative to review and discuss PWGSC's Waste Management Plan and Goals.

### **1.03 DEFINITIONS**

- .1 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .2 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .3 Reuse: repeated use of product in same form but not necessarily for same purpose.  
Reuse includes:
  - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .4 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

### **1.04 MATERIALS SOURCE SEPARATION**

- .1 Where local recycling facilities readily available: before project start-up, prepare area and provide separate containers for re-usable and recyclable materials for the following materials:
  - .1 Stucco.
  - .2 Air Barrier.
  - .3 Metals.
  - .4 Sealants and materials.
  - .5 Other materials as indicated in technical sections.
- .2 Locate containers in locations to facilitate deposit of materials without hindering daily operations as directed by Departmental Representative.
- .3 Locate separated materials in areas which minimize damage.

### **1.05 STORAGE, HANDLING AND PROTECTION**

- .1 Handle waste materials not re-used, salvaged or recycled in accordance with appropriate regulations and codes.
- .2 Materials in separated condition: collect, handle, store on site where directed and transport off-site to an approved and authorized recycling facility.
- .3 Materials must immediately be separated into required categories for re-use or recycling.

- .4 Unless specified otherwise, materials for removal become Contractor's property.
- .5 Separate non-salvageable materials for recycling where applicable recycling facility exists. Transport and deliver non-salvageable items to licensed recycling and disposal facilities.
- .6 Protect structural components not removed for demolition from movement or damage.
- .7 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.
- .8 Protect surface drainage, mechanical and electrical from damage and blockage.
- .9 Separate and store materials produced during dismantling of structures in designated areas.
- .10 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.

**1.06 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, oil, paint thinner into waterways, storm, or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .4 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

**1.07 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures as approved by Departmental Representative.

**1.08 SCHEDULING**

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

**2 PRODUCTS****2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION****3.01 APPLICATION**

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

**3.02 CLEANING**

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 07 27 60 – Air Barrier.
- .2 Section 07 46 10 – Fiber Cementitious Siding.
- .3 Section 07 92 00 – Joint Sealants.
- .4 Section 09 91 99 – Painting for Minor Works.

### **1.02 ADMINISTRATIVE REQUIREMENTS**

- .1 Acceptance of Work Procedures:
  - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
      - .1 Submit list of Contractor identified deficiencies to Departmental Representative for review.
    - .2 Request Departmental Representative review.
  - .2 Departmental Representative's review:
    - .1 Departmental Representative and Contractor to review Work and identify defects and deficiencies.
    - .2 Contractor to correct Work as directed.
  - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
    - .1 Work: completed and reviewed for compliance with Contract Documents.
    - .2 Defects: corrected and deficiencies completed.
      - .1 Submit for review colour digital images of corrected work referencing the corresponding Progress Observation Report item number.
    - .3 Work: complete and ready for final review.
  - .4 Final Review:
    - .1 When completion tasks are done, request final review of Work by Departmental Representative.
    - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-review.

### **1.03 FINAL CLEANING**

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.



**2 PRODUCTS**

**2.01 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 ADMINISTRATIVE REQUIREMENTS**

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

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two (2) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, three (3) final hard copies and one electronic copy of operating and maintenance manuals. Substantial completion will not be considered until this submission is completed.
- .3 Provide evidence, if requested, for type, source and quality of products supplied.
- .4 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

### **1.03 FORMAT**

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .4 Arrange content by Section numbers and sequence of the Table of Contents in accordance with the Table of Contents contract documents.
- .5 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .6 Text: manufacturer's printed data, or typewritten data.

- .7 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages with drawing number and description visible.
- .8 Provide 1:1 scaled CAD files in dwg format on CD.

#### **1.04 CONTENTS - PROJECT RECORD DOCUMENTS**

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

#### **1.05 AS-BUILT DOCUMENTS**

- .1 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
  - .1 Measured locations of internal utilities and appurtenances, reference to visible and accessible features of construction.
  - .2 Field changes of dimension and detail.
  - .3 Changes made by change orders.
  - .4 Change Orders and other modifications to Contract.
  - .5 Details not on original Contract drawings.
  - .6 References to related shop drawings and modifications.
- .2 Contract Specifications: legibly mark each item to record actual 'workmanship of construction', including:
  - .1 Manufacturer, trade name, and catalogue number of each 'Product/Material' actually installed, particularly optional items and substitute items.
  - .2 Changes made by addenda and change orders.
- .3 As-built information:
  - .1 Record changes in red ink as work progresses.
  - .2 Mark on 1 set of drawings, specifications and shop drawings at completion of project and before final review.
  - .3 Provide one electronic PDF file format with all as-built information included.
  - .4 Submit to Departmental Representative.

#### **1.06 EQUIPMENT AND SYSTEMS**

- .1 Include manufacturer's printed operation and maintenance instructions.

- .2 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .3 Additional requirements: as specified in individual specification sections.

#### **1.07 MATERIALS AND FINISHES**

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

#### **1.08 WARRANTIES**

- .1 Separate each Document with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier and manufacturer with name, address and telephone number of responsible principal.
- .3 Obtain warranties and inspection reports executed in by subcontractors, suppliers, manufacturers and inspection agencies within 10 days after completion of applicable item of work.
- .4 Except for items put into use with the Departmental Representative's permission leave date of beginning of time of warranty until the date of substantial performance is determined.
- .5 Verify that documents are in proper form, contain full information and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal with Operating and Maintenance manual.
- .8 Conduct joint 9 month warranty inspection, measured from time of acceptance, by Departmental Representative.

#### **1.09 COMPLETION**

- .1 Submit a written certificate that the following have been performed:
  - .1 Work has been completed and reviewed for compliance with the Contract documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Work is complete and ready for final review.

**2 PRODUCTS**

**2.01 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 08 01 11 – Metal Doors and Frames Replacement.
- .2 Section 08 01 50 – Window Replacement.

### **1.02 SUMMARY**

- .1 Demolition work includes but is not limited to:
  - .1 Removal and disposal of existing face seal stucco, coat base and steel mesh, air barrier, flashings, louvres and interior gypsum wall board as indicated.
  - .2 Temporary relocation and reinstallation of building signage, existing rainwater leaders, soffit, windows and doors and door frames.
  - .3 Investigation of existing wood framing for deterioration as indicated on drawings. Removal and replacement of existing sheathing, vapour barrier and interior gypsum wall board as indicated and as required where deteriorated.

### **1.03 SITE CONDITIONS**

- .1 If material resembling hazardous materials other designated substance (mould) be encountered, stop work in discovered area, take preventative measures, and notify Departmental Representative immediately.
  - .1 Proceed with work in the area of discovery only after receipt of written instructions have been received from Departmental Representative.
- .2 Notify Departmental Representative before disrupting building access or services.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not used.

## **3 EXECUTION**

### **3.01 EXAMINATION**

- .1 Inspect building with Departmental Representative and verify extent and location of items designated for removal, disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities in operating condition.

### **3.02 PREPARATION**

- .1 Protection of In-Place Conditions:
  - .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features and parts of building and finishes to remain.
  - .2 Protect existing roofing.
  - .3 Keep noise, dust, and inconvenience to occupants to minimum.
  - .4 Protect building systems, services and equipment.
  - .5 Provide temporary dust screens, covers, railings, supports and other protection as

- required.
- .6 Do Work in accordance with Section 01 35 33 - Health and Safety Requirements.
- .2 Demolition/Removal:
  - .1 Remove parts of existing buildings as indicated to permit remedial construction. Items for reinstallation to be stored in a dry, protected area as directly by Departmental Representative.
    - .1 Existing security cameras, communication antennas, air source heat pump to be removed and either stored or relocated temporarily and then reinstalled after completion of remedial work by Departmental Representative approved contractor in accordance with Section 01 14 00 – Work Restrictions.
  - .2 Trim edges of partially demolished building elements to tolerances as defined by Departmental Representative to suit future use.

### **3.03 REINSTALLATION**

- .1 Reinstall elements that have been removed for remediation work once remediated work has been completed and reviewed by Departmental Representative. Security cameras and communication antennas to be reinstalled by CBSA approved contractor.
- .2 Install to original position and make good any damaged elements to satisfaction of Departmental Representative.
- .3 Upon completion of installation, notify Departmental Representative for review of completed work.

### **3.04 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Refer to demolition drawings and specifications for items to be salvaged for reuse.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at authorized facility.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 – Demolition for Minor Works.

### **1.02 REFERENCES**

- .1 American Conference of Governmental Industrial Hygienists (ACGIH), Bioaerosols Assessment and Control 1999.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .3 New York City Department of Health - Bureau of Environmental and Occupational Disease Epidemiology's Guidelines on the Assessment and Remediation of Fungi in Indoor Environment 2000.
- .4 United States Department of Labor Occupational Safety and Health Administration (OSHA)
  - .1 29 CFR 1910.134 - Respiratory Protection.
  - .2 29 CFR 1910.1200 - Hazard Communication.
- .5 United States Environmental Protection Agency (EPA), Mould Remediation in Schools and Commercial Buildings, 2001.

### **1.03 DEFINITIONS**

- .1 Cleaning solution: detergent solution.
- .2 Competent person: individuals, Departmental Representative who can demonstrate that mould remediation training has been obtained, is capable of identifying existing microbial hazards in workplace and selecting appropriate control strategy for microbial exposure.
- .3 Contractor: remediation contractor providing demolition and removal services as defined in specification.
- .4 Fibre reinforced polyethylene sheet (FRPS): rip-proof fibre reinforced polyethylene sheet sheeting with added fibre reinforced adhesive tape along edges.
- .5 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining particles greater than 0.3 microns in any direction at 99.97% efficiency.
- .6 HVAC: heating ventilating and air-conditioning systems which serve occupied areas. Includes but is not limited to air handling units, duct work, terminal boxes and vents.
- .7 Mould Contaminated Work Area: specific area or location where actual work is being performed or such other areas of a facility where it has been determined that it may be hazardous to public health as result of mould remediation.
- .8 Occupied Area: areas of building or work site that is outside of Mould Contaminated Work Area.
- .9 PPE: Personnel Protection Equipment.



- .10 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have a minimum of six litres capacity for work.

#### **1.04 REGULATORY REQUIREMENTS**

- .1 Comply with regulations in effect at time work is performed. In case of conflict among these requirements or with these specifications the more stringent requirement applies. If no regulations exist, follow guidelines most widely accepted by recognized professional organizations such as occupational hygienists, health professionals or environmental engineers as listed in paragraph 1.02 References.

#### **1.05 CLOSEOUT SUBMITTALS**

- .1 Maintain general log to provide permanent record of project of where mould removal occurred. Maintain logs and other required documentation as part of permanent project file.

#### **1.06 INSTRUCTION AND TRAINING**

- .1 Before commencing work, provide Departmental Representative proof that worker had instruction and training in potential health hazards of mould exposure, handling of hazardous materials, in personal hygiene including protective clothing, in entry and exit from Mould Contaminated Work Area, and in use of disposal procedures including building materials. This training can be performed as part of a program to comply with requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- .2 Instruction and training must be provided by designated construction safety advisor.

#### **1.07 WORKER PROTECTION**

- .1 Non-powered disposable filter-type respirator of type N95 OSHA 29 CFR 1910.134 equivalent, suitable for protection against mould and acceptable to Provincial Authority having jurisdiction.
- .2 Gloves and eye protection.
- .3 Disposable paper coveralls are recommended.
- .4 No person required to enter Mould Contaminated Work Area to have facial hair that affects seal between respirator and face.
- .5 Eating, drinking and chewing are not permitted in Mould Contaminated Work Area.
- .6 Before leaving Mould Contaminated Work Area, dispose of protective clothing as waste as specified.
- .7 Ensure workers wash hands and face after leaving Mould Contaminated Work Area.

#### **1.08 VISITOR PROTECTION**

- .1 Protective clothing and approved respirators Non-powered disposable filter-type respirator of type N95 OSHA 29CFR 1910.134 full face to be worn by Authorized Visitors to Mould Contaminated Work Area.
- .2 Instruct Authorized Visitors in use of protective clothing, respirators, and procedures.
- .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Mould contaminated work area.

## **1.09 HOURS OF WORK**

- .1 Typical work schedule - Perform work in accordance with Section 01 14 00 – Work Restrictions (after hours). Include in Contract Sum additional costs due to this requirement. Be available to work continuously from beginning to end of project.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Drop Sheets: 0.15 mm thick woven fibre reinforced fabric bonded both sides with fibre reinforced polyethylene sheet.
- .2 Disposal bags: dust-tight 0.15 mm clear polyethylene waste bags.
- .3 Wetting Agent: water to mist mould-containing material.
- .4 Cleaning solution: detergent solution for damp wipe and/or mop.
- .5 Fibre reinforced adhesive tape: used in sealing joints of fibre reinforced polyethylene sheets and for attachment of fibre reinforced polyethylene sheet to finished and unfinished surfaces. Fibre reinforced adhesive tape must be capable of adhering under both dry and wet conditions.
- .6 Materials: provide materials such as fibre reinforced polyethylene sheeting, lumber, nails, and hardware necessary to construct and dismantle barriers that isolate Mould Contaminated Work Area.

### **2.02 TOOLS AND EQUIPMENT**

- .1 Tools and equipment: suitable for use with microbial contamination and must be able to withstand de-contamination.
- .2 Personnel protective equipment (protective clothing, disposable respirators): provided in sufficient quantities for duration of project.
- .3 Vacuum cleaners: equipped with HEPA filters.
- .4 Ladders and/or scaffolds: adequate length, strength and sufficient quantity to support work schedule.

## **3 EXECUTION**

### **3.01 PREPARATION OF MOULD WORK AREA (<1 TO 3 SQUARE METRES IN OCCUPIED SPACE)**

- .1 Mould Contaminated Work Area and areas adjacent and around area: to be unoccupied. Vacating people from spaces adjacent to Mould Work Area is not necessary but is recommended for elderly people, persons having undergone recent surgery, immune suppressed people or people with chronic inflammatory lung diseases.
- .2 Clean movable objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum equipment, damp wipe surfaces and remove such objects from Mould Contaminated Work Area to secure and clean area.

- .3 Remove visible dust from surfaces in Mould Contaminated Work Area where dust is likely to be disturbed during course of work. Use HEPA vacuum and damp wipe area.
- .4 Do not use compressed air to clean up or remove dust from surfaces.
- .5 Seal off return air grills in Mould Contaminated Work Area with fibre reinforced polyethylene sheeting and fibre reinforced adhesive tape to minimize migration of contaminants to other parts of building.
- .6 Use 0.15 mm fibre reinforced polyethylene drop sheets tightly sealed with fibre reinforced adhesive tape over flooring in Mould Contaminated Work Areas.

### **3.02 MICROBIAL REMOVAL/REMEDIATION**

- .1 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing mould to be cut. Perform work to reduce dust creation to lowest levels practicable.
- .2 Non-porous materials can be cleaned using the cleaning solution and reused.
- .3 Porous materials, exterior gypsum wallboard sheathing with mould contamination or dampness is to be removed, discarded and replaced.
- .4 Dispose of contaminated building materials as specified.
- .5 During mould removal/remediation, should Departmental Representative suspect contamination of areas outside enclosed Mould Contaminated Work Area, contractor to stop removal/remediation work and immediately decontaminate affected areas. Eliminate causes of such contamination. Prohibit unprotected individuals from entering these contaminated areas until air and swab sampling and a visual inspection determines areas are free from contamination.
- .6 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.

### **3.03 REPAIR AND CLEAN-UP**

- .1 Clean, frequently during work and immediately after completion of work, Mould Contaminated Work Area using a HEPA vacuum by damp mopping with cleaning solution.
- .2 Perform restoration of designated Mould Contaminated Work Area as specifies.
- .3 Leave areas dry and visibly free from contamination, debris and dust.
- .4 Perform final thorough clean-up of work areas and adjacent areas affected by work using HEPA vacuum and damp mopping with detergent solution.

### **3.04 WASTE DISPOSAL**

- .1 Place debris, dust and mould-containing waste in doubled-bagged dust-tight 0.15 mm clear polyethylene waste bags. Treat drop sheets and disposable protective clothing as waste; fold these items to contain dust, and place in plastic bags. Securely seal bags.
- .2 Clean exterior of each waste-filled bag using damp cloths and cleaning solution or HEPA vacuum prior to removal from Mould Contaminated Work Area.
- .3 Remove waste bags from site and dispose at authorized facilities.

**3.05 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS**

- .1 Relocate objects moved to temporary locations to their proper positions. Ensure objects are cleaned before been moved into cleaned areas.
- .2 Remount objects removed to former positions.
- .3 Re-establish mechanical and electrical systems to proper working order. Install new filters into HVAC systems serving the affected area as part of remediation.

**3.06 FINAL CLEARANCE**

- .1 Departmental Representative to conduct thorough visual inspection to detect visible accumulations of dust or bulk materials remaining in work area. Should dust, debris, microbial contamination, or residue be detected repeat cleaning until area meets approval.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 20 00 – Finish Carpentry.
- .2 Section 07 46 10 – Fiber Cementitious Siding.
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim.

### **1.02 REFERENCES**

- .1 CSA International
  - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O121-08, Douglas Fir Plywood.
  - .3 CSA O141-05(R2009), Softwood Lumber.
  - .4 CSA O151-09, Canadian Softwood Plywood.
  - .5 CAN/CSA-O325.0-07(R2012), Construction Sheathing.
- .2 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber 2010.

### **1.03 QUALITY ASSURANCE**

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.
- .3 Plywood, construction sheathing identification: by grademark in accordance with applicable CSA standards.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect wood from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, banding, and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
  - .1 CAN/CSA-O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
  - .3 Pressure-treated for exterior installation.
- .2 Furring (12mm rainscreen), blocking, nailing strips, rough bucks, fascia backing:
  - .1 S2S (surfacing on opposite sides) is acceptable.
  - .2 Pressure-treated.
  - .3 Board sizes: as indicated
  - .4 Board grade: Standard or better grade.
- .3 Panel Materials:
  - .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
    - .1 Urea-formaldehyde free.
  - .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
    - .1 Urea-formaldehyde free.
- .4 Wood Preservative:
  - .1 Surface-applied wood preservative: clear coloured, copper naphthenate or 5% pentachlorophenol solution, water repellent preservative.
  - .2 Pentachlorophenol use is restricted to building components that are in ground contact and subject to decay or insect attack only. Where used, pentachlorophenol-treated wood must be covered with two coats of an appropriate sealer.
  - .3 Structures built with wood treated with pentachlorophenol and inorganic arsenicals must not be used for storing food nor should the wood come in contact with drinking water.
- .5 Primers and Paints Coatings: in accordance with manufacturer's recommendations for surface conditions.

### **2.02 ACCESSORIES**

- .1 Fasteners: to CAN/CSA-G164, for exterior work and pressure- preservative treated lumber.
- .2 Nails, spikes and staples: to CSA B111.
- .3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and as recommended for purpose by manufacturer.

## **3 EXECUTION**

### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for rough carpentry installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.

- .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.02 PREPARATION**

- .1 In Contractor Laydown Area, prepare designated area for wood preservative touch-up. Provide impenetrable sheeting protecting the ground and adjacent areas from spills and leakage. Ensure treatment container lids are securely fastened and compatible containers for brushes and rags are provided and sealed after use.
- .2 Treat surfaces of material with wood preservative on all four faces, before installation.
- .3 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and 1 minute soak on plywood.
- .4 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

### **3.03 INSTALLATION**

- .1 Comply with requirements of NBC, supplemented by the following paragraphs.
- .2 Install furring and blocking as required to space-out and support fascia, soffit, siding and other work as required.
- .3 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .4 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .5 Install wood fascia backing, nailers, and other wood supports as required and secure using galvanized fasteners.
- .6 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

### **3.04 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**





## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 07 46 10 – Fiber Cementitious Siding.
- .2 Section 07 92 00 – Joint Sealants.
- .3 Section 08 01 11 – Metal Doors and Frames Replacement.
- .4 Section 08 01 50 – Window Replacement.
- .5 Section 08 90 00 – Louvres and Vents.

### **1.02 REFERENCES**

- .1 ASTM International
  - .1 ASTM A 123/A 123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 CSA International
  - .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O141-05(R2014), Softwood Lumber.
- .3 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber 2010.

### **1.03 QUALITY ASSURANCE**

- .1 Plywood panels to CSA and ANSI standards.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Storage and Handling Requirements:
  - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect wood products from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Lumber (window wood stools): softwood, S4S finger jointed primed spruce to CSA O141:
  - .1 NLGA Standard Grading Rules for Canadian Lumber.
  - .2 AWMAC custom grade, moisture content 12% or less.
  - .3 Machine stress-rated lumber is acceptable.
  - .4 Size:
    - .1 Stool: 25mm thick x 150mm deep, length to suit unless otherwise indicated.
    - .2 Apron: 25mm x 50mm, length to suit unless otherwise indicated.

- .2 Nails and staples: to CSA B111; galvanized to ASTM A 123/A 123M for exterior work and for treated lumber; stainless steel finish elsewhere.
- .3 Wood screws: stainless steel type and size to suit application.
- .4 Adhesive and Sealants: in accordance with Section 07 92 00 - Joint Sealants.

### **3 EXECUTION**

#### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify conditions of existing substrates previously revealed during demolition work are acceptable for wood products installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

#### **3.02 INSTALLATION**

- .1 Wood stools:
  - .1 Set plumb, square, level and at correct elevation. Secure anchorages and connections to adjacent construction.
  - .2 Seal perimeter of all corners in accordance with Section 07 92 00 – Joint Sealants.
  - .3 Paint finish as indicated.

#### **3.03 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

#### **3.04 PROTECTION**

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

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 08 99 – Rough Carpentry for Minor Works.
- .2 Section 07 46 10 – Fiber Cementitious Siding.
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .4 Section 07 92 00 – Joint Sealants.
- .5 Section 08 01 11 – Metal Doors and Frames Replacement.
- .6 Section 08 01 50 – Window Replacement.
- .7 Section 08 90 00 – Louvres and Vents.

### **1.02 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM):
  - .1 ASTM C920 - 11 Standard Specification for Elastomeric Joint Sealants.
  - .2 ASTM D882-12 - Test Method for Tensile Properties of Thin Plastic Sheeting.
  - .3 ASTM D903 - 98(2010) Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
  - .4 ASTM D1004 - 09 Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
  - .5 ASTM D1876 - 08 Standard Test Method for Peel Resistance of Adhesives (T-Peel Test).
  - .6 ASTM D1938 - 08 Standard Test Method for Tear-Propagation Resistance (Trouser Tear) of Plastic Film and Thin Sheeting by a Single-Tear Method.
  - .7 ASTM E84-12, Standard Test Method for Surface Burning Characteristics of Building Materials.
  - .8 ASTM E96/E96M-12, Standard Test Methods for Water Vapor Transmission of Materials; Compliant with Procedure B (Water Method) for interior to exterior testing.
  - .9 ASTM E283-04(2012) – Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
  - .10 ASTM E 1186-03-2009, Standard Practices for Air Leakage Site Detection in Building Envelope and Air Retarder Systems.
  - .11 ASTM E2178-11 Standard Test Method for Air Permeance of Building Materials.
- .2 Canadian Construction Materials Centre (CCMC):
  - .1 CCMC Technical Guide 07193 Sheathing, Membrane, Breather Type.

### **1.03 PERFORMANCE REQUIREMENTS**

- .1 Select and install wall components and assemblies to resist air leakage caused by static and dynamic air pressure across exterior wall, including windows, doors, and other interruptions to integrity of wall systems; to maximum air leakage rate of 0.02 L/s.m2 when subjected to pressure differential of 75 Pa as measured in accordance with CAN/ULC-S741 and ASTM E2178.

- .2 Provide continuity of air barrier materials and assemblies in conjunction with materials described in Section 07 92 00 - Joint Sealants.

#### **1.04 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's installation instructions, printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit WHMIS MSDS - Material Safety Data Sheets.
- .3 Shop drawings: submit drawings.
  - .1 Provide drawings showing relationship of membrane to:
    - .1 Sheathing.
    - .2 Soffit, sill and frame conditions.
    - .3 Adjacent to existing openings.
    - .4 Pipe, conduit and duct penetrations.

#### **1.05 QUALITY ASSURANCE**

- .1 Ensure all work is performed in accordance with NBC and manufacturer's instructions.
- .2 Obtain all breathable underlayment through one source from a single manufacturer.
  - .1 Manufacturer to have experienced in-house technical and field observation personnel qualified to provide technical support.
- .3 Ensure all work is performed in accordance with NBC and manufacturer's instructions.

#### **1.06 MOCK-UP**

- .1 Construct mock-up, submit photos and give notice in accordance with Section 01 45 00 - Quality Control and in conjunction with Section 07 46 10 – Fiber Cementitious Siding.
- .2 Construct typical exterior wall panel, full height by 1.5m wide incorporating adjacent to openings, building corner condition, and junction with soffit; illustrating materials interface and seals.
- .3 Locate where directed by Departmental Representative. Mock-up may remain as part of Work once reviewed and accepted.

#### **1.07 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver, store and handle materials in accordance with manufacturer's written instructions. Materials are to be delivered in original containers with seals unbroken, wrapped and labeled with manufacturer's name and product name.

#### **1.08 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

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

#### **1.09 SEQUENCING**

- .1 Sequence work to permit installation of materials in conjunction with related materials and seals.

#### **1.10 WARRANTY**

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide manufacturer's standard warranty under provisions of Section 01 78 00 - Closeout Submittals. Warranty to be executed by authorized company official.
- .3 Warranty: include coverage of installed sheet materials which:
  - .1 Fail to achieve air tight and watertight seal.
  - .2 Exhibit loss of adhesion or cohesion.
  - .3 Do not cure.
- .4 Manufacturer's warranty is in addition to, and not a limitation of, other rights Departmental Representative may have under Contract Documents.

### **2 PRODUCTS**

#### **2.01 MATERIALS**

- .1 Wall Assembly (rainscreen): triple layer sheet membrane of front and back carrier sheets with a middle layer of spun-bonded polypropylene fabric with micro-porous film laminate and acrylic vapour permeable as required to achieve specified performance criteria; functionally compatible with adjacent materials and components and in accordance with ASTM D882, ASTM D3330, ASTM E-84, ASTM E-96 (Method B), ASTM E-2178 and ASTM E-2357.05.
  - .1 Self-adhered.
  - .2 Thickness: 0.66mm.
  - .3 Size: 1,500mm wide.
  - .4 Colour: orange.
- .2 Sills and wall to curb: self-adhered SBS rubberized asphalt, integrally laminated to a cross-laminated polyethylene film as required to achieve specified performance criteria; functionally compatible with adjacent materials and components and in accordance with ASTM D903, ASTM D1004, ASTM D1876, ASTM D1938, ASTM E-96 (Method B) and CGSB 37-GP-56M.
  - .1 Thickness: 1.0mm thick.
  - .2 Accessories:
    - .1 Primer: as recommended by manufacturer.
    - .2 Rubberized mastic for edges, laps, seams and penetrations as required to achieve specified performance criteria; functionally compatible with adjacent materials and components and in accordance with ASTM C920 Type S, Grade NS, Class 25.
      - .1 One-part, low-odor, moisture cure.
- .3 Accessories:

- .1 Internal corner flashings: plastic factory formed, 3 dimensional, 75mm x 75mm by 150mm, mechanically fastened.
- .2 PVC louvre vents, 50mm round, white with integrated insect screens.

### **3 EXECUTION**

#### **3.01 MANUFACTURER'S INSTRUCTIONS**

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

#### **3.02 EXAMINATION**

- .1 Verify that surfaces and conditions are ready to accept the Work of this section. Prepare substrate surfaces in accordance with manufacturer's instructions. Notify Departmental Representative in writing of any discrepancies. Commencement of Work or any parts thereof shall mean acceptance of the prepared substrates.
- .2 All surfaces must be sound, clean and free of oil, grease, dirt or other contaminants detrimental to installation. Fill voids and gaps in substrate to provide an even surface.
- .3 Concrete surfaces must be smooth and dry without large voids, spalled areas or sharp areas.

#### **3.03 RAIN SCREEN SYSTEM**

- .1 Install PVC louvre vents 200mm from top and bottom of every stud cavity (centered vertically) space, complete with perimeter bead of sealant.

#### **3.04 INSTALLATION**

- .1 Install barrier materials and preformed internal corner flashings in accordance with manufacturer's instructions.
- .2 Install sealant materials in accordance with Section 07 92 00 – Joint Sealants and manufacturer's instructions.
- .3 Apply sealants within recommended application temperature ranges.

#### **3.05 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

#### **3.06 PROTECTION OF FINISHED WORK**

- .1 Protect finished work in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Protect wall areas covered with primary water-resistive vapor permeable air barrier from damage due to construction activities, high wind conditions, and extended exposure to inclement weather.

- .3 Do not permit adjacent work to damage work of this section.

**END OF SECTION**





## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 08 99 – Rough Carpentry for Minor Works.
- .2 Section 06 20 00 – Finish Carpentry.
- .3 Section 07 27 60 – Air Barriers.
- .4 Section 07 92 00 – Joint Sealants.

### **1.02 REFERENCES**

- .1 Aluminum Association (AA).
  - .1 AA-DAF-45-03, Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM A 653/A 653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM B136-84(2013), Standard Method for Measurement of Stain Resistance of Anodic Coatings on Aluminum.
  - .3 ASTM B244-09, Standard Test Method for Measurement of Thickness of Anodic Coatings on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments.
  - .4 ASTM C834-10, Standard Specification for Latex Sealants.
  - .5 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants.
  - .6 ASTM C1186-08(2012), Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.
  - .7 ASTM E84-13a, Standard Test Method for Surface Burning Characteristics of Building Materials.
  - .8 ASTM E 96-12, Standard Test Methods for Water Vapor Transmission of Materials.
  - .9 ASTM E119-12a, Standard Test Methods for Fire Tests of Building Construction and Materials.
  - .10 ASTM E136-12, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.
- .3 Department of Justice Canada (Jus).
  - .1 Canadian Environmental Protection Act (CEPA), 1999.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .5 The Master Painters Institute (MPI).
  - .1 Architectural Painting Specification Manual - 2010.
- .6 National Research Council (NRC).
- .7 Transport Canada (TC).
  - .1 Transportation of Dangerous Goods Act (TDGA), 1992.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for siding and reveal trims. Include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Indicate dimensions, wall openings, head, jamb and sill detail, materials and finish, anchor details, compliance with design criteria and requirements of related work.

### **1.04 MOCK-UP**

- .1 Construct mock-up, submit photos and give notice in accordance in accordance with Section 01 45 00 - Quality Control and in conjunction with Section 07 27 60 – Air Barriers.
- .2 Construct typical exterior wall panel, full height by 1.5m wide, incorporating adjacent to window opening, building corner condition, and junction with soffit; illustrating materials trim interface and seals. Locate where directed by Departmental Representative.
- .3 Locate where directed by Departmental Representative. Mock-up may remain as part of Work once reviewed and accepted.

### **1.05 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittal.
- .2 Operation and Maintenance Data: submit operation and maintenance data.

### **1.06 DELIVERY, STORAGE AND HANDLING**

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

### **1.07 WARRANTY**

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Materials:
  - .1 Cementitious siding: provide manufacturer's standard 30 year warranty for defects relating to cementitious siding and manufacturer's standard 15 year warranty for colour finish.
  - .2 Trim reveals: provide manufacturer's standard 15 year warranty for trim reveals.
- .3 Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

### **1.08 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 GF - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Ensure emptied containers are sealed and stored safely.
- .6 Unused paint or coating material must be disposed of at an official hazardous material collections site.
- .7 Do not dispose of unused paint material into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .8 Dispose of unused sealant material at official hazardous material collections site.
- .9 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .10 Dispose of unused adhesive material at official hazardous material collections site.
- .11 Fold up metal banding, flatten and place in designated area for recycling.

#### **1.09 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 Labour Canada.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Exterior Fiber-Cement Board: to ASTM C1186, Grade II, type A, non-combustible to ASTM E136, 8mm thick, pre-finished :
  - .1 Description: Lap siding.
  - .2 Medium Density.
  - .3 Flame Spread Index: 0 to ASTM E84.
  - .4 Smoke Developed Index: 5 to ASTM E84.
  - .5 Thickness: 8mm.
  - .6 Size: 210mm wide x 3657mm length,
  - .7 Texture: Smooth.
  - .8 Finish: factory finish, colour to be selected from Manufacturer's standard range of colours.
    - .1 Touch-up finish: pre-packaged touch-up kit in accordance with fiber cement manufacturer.
- .2 Aluminum extrusions: Aluminum Association alloy AA 6063-T5 and AA 6060.
- .3 Sealants: in accordance with Section 07 92 00 – Joint Sealants.
- .4 Fasteners: exposed, stainless steel, purpose made, self tapping, as recommended by manufacturer.
- .5 Adhesive: purpose made, waterproof, contact type, cured resilient without final set.

## **2.02 ACCESSORIES - TRIMS**

- .1 Aluminum reveal trims: made to 6063-T5 anodized aluminum. Sizes and profiles as indicated, clear anodized finish to ASTM B244 and ASTM B136.
  - .1 Horizontal trim.
  - .2 Vertical trim.
  - .3 Outside corner trim.
  - .4 Inside corner trim.
  - .5 J channel trim.
  - .6 Drip cap trim.
- .2 Starter Transition Trim – perforated vinyl starter transition trim with insect screen to base of rainscreen, size:19mm to profiles indicated.

## **3 EXECUTION**

### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify conditions of existing substrates previously revealed during demolition work are acceptable for wood products installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.02 INSTALLATION**

- .1 Install framing, trims and boards in accordance with manufacturer's written installation instructions. Secure to building framing system with fasteners. Ensure flatness and alignment to specified tolerances.
  - .1 Maximum variation from plane or location shown on shop drawings: 10 mm/10 m of length and up to 20 mm/100 m.
  - .2 Maximum deviation for a horizontal member: 3 mm in an 8.5 m run
  - .3 Maximum offset from true alignment between two adjacent members abutting end to end, in line: 0.75 mm.
- .2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects. Form joints to conceal shrinkage.
- .3 Protect surface of metals in contact with concrete or other cementitious surface with isolation coating.
- .4 Field cut edges shall be coated using manufacturer recommended exterior grade touch up coating compatible with finish coat.
- .5 Seal joints to provide weathertight installation.
- .6 Fastening:
  - .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
  - .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.

- .3 Do not caulk nail heads. Refer to manufacturer's written recommendations for ColorPlus touch ups.
- .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

### **3.03 FINISHING**

- .1 Touch up siding to match with manufacturer's touch up paint in accordance with manufacturer's written installation instructions.

### **3.04 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### **3.05 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair or replace damaged products.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 20 00 – Finish Carpentry.
- .2 Section 07 27 60 – Air Barrier.
- .3 Section 07 46 10 – Fiber Cementitious Siding.
- .4 Section 07 92 00 – Joint Sealants.
- .5 Section 08 01 11 – Metal Doors and Frames Replacement.
- .6 Section 08 01 50 – Window Replacement.
- .7 Section 08 90 00 – Louvres and Vents.

### **1.02 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM A 653/A 653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM A 792/A 792M-10, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
  - .3 ASTM D 523-08, Standard Test Method for Specular Gloss.
- .2 Roofing Contractors Association of British Columbia (RCABC)
  - .1 RCABC Roofing Practices Manual, current edition.
- .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).

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature for sheet metal flashing systems materials, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 33 - Health and Safety Requirements.
- .3 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.

### **1.04 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 and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**1.05 WARRANTY**

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide manufacturer's standard warranty for PVDF coating.
- .3 Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

**2 PRODUCTS**

**2.01 PREFINISHED STEEL SHEET**

- .1 Prefinished steel to ASTM A653M, Grade 230 or AZ150 Galvalume, sheet steel conforming to ASTM A1792M Grade 230.
  - .1 Thickness: 0.635mm (24 ga.).
  - .2 Finish coating: Polyvinylidene Fluoride (PVDF).
  - .3 Colour: to be selected by Departmental Representative unless otherwise specified.

**2.02 ACCESSORIES**

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
- .3 Underlay for metal flashing: in accordance with Section 07 27 60 – Air Barrier.
- .4 Sealants: in accordance with Section 07 92 00 – Joint Sealants.
- .5 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.
- .6 Touch-up paint: as recommended by manufacturer.

**2.03 FABRICATION**

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable as indicated.
- .2 Form pieces in 2400 mm maximum lengths.
  - .1 Make allowance for expansion at joints.
- .3 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

**2.04 METAL FLASHINGS**

- .1 Form metal flashings to profiles and with end dams as indicated.

### **3 EXECUTION**

#### **3.01 MANUFACTURER'S INSTRUCTIONS**

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

#### **3.02 INSTALLATION**

- .1 Install sheet metal work in accordance with CRCA FL series details, AAI-Aluminum Sheet Metal Work in Building Construction as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Provide underlay under flashing in accordance with Section 07 27 60 – Air Barriers.
  - .1 Secure in place and lap joints 100 mm.
- .4 Lock end joints and caulk with sealant.
- .5 Insert metal flashing under cap flashing to form weather tight junction.
- .6 Caulk flashing at cap flashing with sealant.

#### **3.03 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Leave work areas clean, free from grease, finger marks and stains.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 20 00 – Finish Carpentry.
- .2 Section 07 27 60 – Air Barrier.
- .3 Section 07 46 10 – Fiber Cementitious Siding.
- .4 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .5 Section 08 01 11 – Metal Doors and Frames Replacement.
- .6 Section 08 01 50 – Window Replacement.
- .7 Section 08 90 00 – Louvres and Vents.

### **1.02 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM C 719-14, Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
  - .2 ASTM C 834-14, Standard Specification for Latex Sealants.
  - .3 ASTM C 920-11 – Standard Specification for Elastomeric Joint Sealants.
  - .4 ASTM C 1193-13 – Standard Guide for Use of Joint Sealants.
- .2 Department of Justice Canada (Jus)
  - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .4 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit manufacturer's installation instructions and product data in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 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.

### **1.04 MOCK-UP**

- .1 Construct mock-up, submit photos and give notice in accordance with Section 01 45 00 - Quality Control and coordinate mock-up with Section 07 27 60 - Air Barriers, Section 07 46 10 – Fiber Cementitious Siding, Section 08 01 11 – Metal Doors and Frames Replacement and Section 08 01 50 – Window Replacement.

### **1.05 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

### **1.06 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
  - .2 Place materials defined as hazardous or toxic in designated containers.
  - .3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
  - .4 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
  - .5 Divert unused joint sealing material from landfill to official hazardous material collections site.
  - .6 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.
  - .7 Fold up metal banding, flatten, and place in designated area for recycling.

### **1.07 SITE CONDITIONS**

- .1 Environmental Limitations:
  - .1 Do not proceed with installation of joint sealants under following conditions:
    - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.
    - .2 When joint substrates are wet.
- .2 Joint-Width Conditions:
  - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
  - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

### **1.08 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 Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

- .3 Ventilate area of work as directed by Departmental Representative by use of approved portable supply and exhaust fans.

## **1.09 WARRANTY**

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide manufacturer's standard 5 year warranty under provisions of Section 01 78 00 - Closeout Submittals. Warranty to be executed by authorized company official.
- .3 Manufacturer's warranty is in addition to, and not a limitation of, other rights Departmental Representative may have under Contract Documents.

## **2 PRODUCTS**

### **2.01 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 offgas time.

### **2.02 SEALANT MATERIAL DESIGNATIONS**

- .1 Type 1: Silicones Neutral One Part.
  - .1 Non-sag to ASTM C920, Type S, Grade NS, Class 25, ASTM C719 (+/-25%) for silicone sealants. Compatible primer as required and recommended by manufacturer. Colour to match adjacent surface.
- .2 Type 2: Acrylic Neutral One Part.
  - .1 Non-sag to ASTM C834, Type OP, Grade -8/%, colour manufacturer's standard colour range, to match. Compatible primer as recommended by manufacturer.
- .3 Type 3: Preformed Compressible and Non-Compressible back-up materials.
  - .1 Polyethylene, Polyolefin, Urethane, Neoprene or Vinyl Foam.
    - .1 Extruded closed cell foam backer rod.
    - .2 Size: oversize 50%.
  - .2 Bond Breaker Tape.
    - .1 Polyethylene bond breaker tape which will not bond to sealant.

### **2.03 SEALANT SELECTION**

- .1 Exterior: air barrier, membrane flashing, cementitious siding, windows, door frames, metal flashings, louvres: Sealant type: 1.
- .2 Interiors: windows, door frames and window stools: Sealant type: 2.

### **2.04 JOINT CLEANER**

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

- .2 Primer: as recommended by manufacturer.

### **3 EXECUTION**

#### **3.01 PROTECTION**

- .1 Protect installed Work of other trades from staining or contamination.

#### **3.02 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.

#### **3.03 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.

#### **3.04 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.

#### **3.05 MIXING**

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

#### **3.06 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 and double beads where indicated.
  - .4 Apply sealant using gun with proper size nozzle.
  - .5 Use sufficient pressure to fill voids and joints solid ensuring full surface contact.

- .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 Cleanup.
  - .1 Clean adjacent surfaces immediately and leave Work neat and clean.
  - .2 Remove excess and droppings, using recommended cleaners as work progresses.
  - .3 Remove masking tape after initial set of sealant.

**END OF SECTION**





## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 - Demolition for Minor Works (removal and reinstallation).
- .2 Section 06 20 00 – Finish Carpentry.
- .3 Section 07 92 00 – Joint Sealants.
- .4 Section 09 91 99 – Painting for Minor Works.

### **1.02 REFERENCES**

- .1 Canadian Steel Door Manufacturers' Association (CSDMA)
  - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2006.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide inventory list of all doors and frames removed. Each door with frame and associated hardware to be identified with a Personal Identification Number (PIN) so that each door is reinstalled to its original location.

### **1.04 STORAGE AND HANDLING**

- .1 Store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Store each numbered door and frame with associated hardware where directed by Departmental Representative.
- .3 Protect existing windows from damage. Contractor responsible for replacement of any windows which are damaged during Work. Replacement windows, if required are to match existing.

## **2 PRODUCTS**

### **2.01 PAINT**

- .1 Field paint steel doors and frames in accordance with Section 09 91 99 – Painting for Minor Works. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.

## **3 EXECUTION**

### **3.01 INSTALLATION GENERAL**

- .1 Re-install doors and frames to CSDMA Installation Guide.

### **3.02 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.
- .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 in accordance with Section 07 92 00 – Joint Sealants.
- .6 Maintain continuity of air barrier and vapour retarder.

### **3.03 DOOR INSTALLATION**

- .1 Re-install doors and associated 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: 13 mm.
- .3 Adjust operable parts for correct function.

### **3.04 FINISH REPAIRS**

- .1 Touch up paint finishes damaged during installation.

### **3.05 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 99 - Demolition for Minor Works (removal and reinstallation).
- .2 Section 06 20 00 – Finish Carpentry.
- .3 Section 07 92 00 – Joint Sealants.

### **1.02 REFERENCES**

- .1 CSA International
  - .1 CAN/CSA-A440/A440.1-00(R2005), Windows.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide inventory list of all windows removed. Each window to be identified with a Personal Identification Number (PIN) so that each window is reinstalled to its original location.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Store each numbered door and frame with associated hardware where directed by Departmental Representative.
- .3 Protect existing windows from damage. Contractor responsible for replacement of any windows which are damaged during Work. Replacement windows, if required are to match existing.

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not used.

## **3 EXECUTION**

### **3.01 INSTALLATION GENERAL**

- .1 Re-install windows in accordance with CSA-A440/A440.1.
- .2 Set windows plumb, square, level and at correct elevation.
- .3 Secure anchorages and connections to adjacent construction.
- .4 Brace frames rigidly in position.

- .5 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .6 Caulk perimeter of windows between window frame and adjacent material in accordance with Section 07 92 00 – Joint Sealants.
- .7 Maintain continuity of air barrier and vapour retarder.

**3.02 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 07 27 60 – Air Barrier.
- .2 Section 07 92 00 – Joint Sealants.

### **1.02 REFERENCES**

- .1 The Aluminum Association Inc. (AAI)
  - .1 AAI DAF-45-03(R2009), Designation System for Aluminum Finishes - 9th Edition.
- .2 Air Movement and Control Association International (AMCA)
  - .1 AMCA 500-L-12, Laboratory Methods of Testing Louvers for Rating.
  - .2 AMCA 501-09, Application Manual for Air Louvers.
  - .3 AMCA 511-10, Certified Ratings Program for Air Control Devices.
- .3 American National Standards Institute (ANSI)
  - .1 ANSI H35.1/H35.1M-2013, Alloy and Temper Designation Systems for Aluminum.
- .4 American Society for Testing and Materials International (ASTM)
  - .1 ASTM B 32-08(2014), Standard Specification for Solder Metal.
  - .2 ASTM B 221-13, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
  - .3 ASTM D 523-14, Standard Test Method for Specular Gloss.
  - .4 ASTM D 822/D822M-13, Standard Practice for Filtered Open-Flame Carbon-Arc Exposure of Paint and Related Coatings.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit drawings. Indicate fabrication and erection details, including anchorage, accessories, and finishes.
- .4 Quality Assurance Submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.

### **1.04 CLOSEOUT SUBMITTALS**

- .1 Closeout Submittals: Provide operation and maintenance data for louvres for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

### **1.05 DELIVERY, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading:

- .1 Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Deliver materials to the site in undamaged condition.
- .2 Storage and Protection:
  - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Protect louvres from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
- .3 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **1.06 WARRANTY**

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide manufacturer's standard warranty.
- .3 Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Weather resistant louvres, with insect screens made to withstand a wind load of not less than 1.44 kilopascals.
- .2 Wall louvers: complete with AMCA certified ratings program seal for air performance and water penetration in accordance with AMCA 500-L and AMCA 511.
- .3 Ratings to indicate water penetration of 0.06 kilograms or less per square meter of free area at free velocity of 244 meters per minute.
- .4 Aluminum extrusions: to AAI DAF-45, ANSI H35.1/H35.1M, AA 6063-T5, ASTM B 221.
- .5 Nails and fasteners: same material as fabricated items.
- .6 Gaskets: vinyl.
- .7 Screens:
  - .1 Insect screens: 0.3 mm diameter aluminum wire, 18 x 14 mesh with 60% free area, secured to aluminum frame.
- .8 Extruded aluminum louvres:
  - .1 Construct louvres from aluminum extrusions of minimum 3 mm thickness to sizes and shapes indicated.
  - .2 Arrange blades, mullions and frame extrusions as indicated.
  - .3 Install concealed vertical stiffeners spaced to meet required loads.

### **2.02 FINISHES**

- .1 Polyvinylidene Fluoride (PVDF) finish to exposed surfaces of aluminum components, colour to match adjacent surface finish unless indicated otherwise.

### **3 EXECUTION**

#### **3.01 MANUFACTURER'S INSTRUCTIONS**

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

#### **3.02 INSTALLATION**

- .1 Install louvres and vents where indicated.
- .2 Attach insect screen to inside face of louver or vent.
- .3 Repair damage to louvres and vents to match original finish.
- .4 Install wall louvers using stops, mouldings, flanges, strap anchors, jamb fasteners as appropriate for wall construction and in accordance with manufacturer's recommendations.

#### **3.03 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

#### **3.04 PROTECTION**

- .1 Where aluminum contacts metal other than zinc, paint dissimilar metal with primer and two coats of aluminum paint.
- .2 Paint wood or other absorptive materials that may become repeatedly wet and in contact with metal with two coats of aluminum paint or coat of heavy-bodied bituminous paint.

**END OF SECTION**





## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 20 00 - Finish Carpentry (reinstallation of wall openings).
- .2 Section 07 92 00 - Joint Sealants.
- .3 Section 09 91 99 – Painting for Minor Works.

### **1.02 REFERENCES**

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM C 475/C 475M-12, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2 ASTM C 840-11, Standard Specification for Application and Finishing of Gypsum Board.
  - .3 ASTM C 1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .4 ASTM C 1047-10a, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .5 ASTM C 1396/C1396M-13, Standard Specification for Gypsum Wallboard.
- .2 Association of the Wall and Ceilings Industries International (AWCI)
  - .1 AWCI Revised Gypsum Board Finishing Recommendation GA-214-2010.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 gypsum board assemblies materials level indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.
  - .3 Protect from weather, elements and damage from construction operations.
  - .4 Handle gypsum boards to prevent damage to edges, ends or surfaces.
  - .5 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return of pallets, crates, padding, and packaging materials.

#### **1.05 AMBIENT CONDITIONS**

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

### **2 PRODUCTS**

#### **2.01 MATERIALS**

- .1 Standard board: to ASTM C 1396/C 1396M regular, thickness to match existing, 1200 mm wide x maximum practical length, ends square cut, edges bevelled.
- .2 Steel drill screws: to ASTM C 1002.
- .3 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047, PVC 0.5 mm base thickness, perforated flanges, one piece length per location.
- .4 Rubber base: profile, height and colour to match existing.
- .5 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
- .6 Joint compound: to ASTM C 475, asbestos-free.

#### **2.02 FINISHES**

- .1 Texture finish: asbestos-free, to match existing texture if required, coating and primer-sealer, recommended by gypsum board manufacturer.

### **3 EXECUTION**

#### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.02 ERECTION**

- .1 Do application and finishing of gypsum board to ASTM C 840 except where specified otherwise.
- .2 Install work level to tolerance of 1:1200.

### **3.03 APPLICATION**

- .1 Apply gypsum board and remedial work (if required) have been approved.
- .2 Apply gypsum board to existing framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
  - .1 Single-Layer Application:
    - .1 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
- .3 Install gypsum board with face side out.
- .4 Do not install damaged or damp boards.
- .5 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

### **3.04 INSTALLATION**

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .3 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .4 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI Levels of Gypsum Board Finish:
  - .1 Levels of finish:
    - .1 Level 4: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
- .5 Finish corner beads and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .6 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .7 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

- .8 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

### **3.05 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling and dispose off-site in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **3.06 PROTECTION**

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

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 20 00 – Finish Carpentry for Minor Works (window stools).
- .2 Section 09 21 16 – Gypsum Board Assemblies.

### **1.02 REFERENCES**

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 The Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - 2010.
  - .2 Maintenance Repainting Manual.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for paint products and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit electronic copies of WHMIS MSDS in accordance with Section 01 35 43 - Environmental Procedures.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store painting materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well ventilated area within temperature as recommended by manufacturer.
- .4 Fire Safety Requirements:
  - .1 Supply 1 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
  - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
  - .3 Handle, store, use and dispose of flammable and combustible materials in

### **1.05 SITE CONDITIONS**

- .1 Heating, Ventilation and Lighting:
  - .1 Ventilate enclosed spaces in accordance with Section 01 51 00 - Temporary Utilities.

- .2 Co-ordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
- .3 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Apply paint finishes when ambient air and substrate temperatures at location of installation can be satisfactorily maintained during application and drying process, within MPI and paint manufacturer's prescribed limits.
  - .2 Apply paint to adequately prepared surfaces, when moisture content is below paint manufacturer's prescribed limits.
- .3 Additional application requirements:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Schedule paint operations in occupied facilities to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

## **1.06 WARRANTY**

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide Contractor's 1 year warranty.
- .3 Contractor warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Supply paint materials for paint systems from single manufacturer.
- .2 Conform to latest MPI requirements for painting work including preparation and priming.
- .3 Materials in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual "Approved Product" listing.
  - .1 Use MPI listed materials having E2 rating where indoor air quality requirements exist.
- .4 Colours:
  - .1 To match existing unless noted otherwise.
- .5 Mixing and tinting:
  - .1 Perform colour tinting operations prior to delivery of paint to site, in accordance with manufacturer's written recommendations. Obtain written approval from Departmental Representative for tinting of painting materials.
  - .2 Use and add thinner in accordance with paint manufacturer's recommendations.
    - .1 Do not use kerosene or similar organic solvents to thin water-based paints.
  - .3 Thin paint for spraying in accordance with paint manufacturer's written recommendations.
  - .4 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

- .6 Gloss/sheen ratings:
- .1 Paint gloss: defined as sheen rating of applied paint, in accordance with following MPI gloss/sheen standard values:

Gloss Level Category	Unit at 60 Degrees	Units at 85 Degrees
G1 – Matte finish	0 to 5	Maximum 10
G2 – Velvet finish	0 to 10	10 to 35
G3 – Eggshell finish	10 to 25	10 to 35
G4 – Satin finish	20 to 35	Minimum 35
G5 – Semi-gloss finish	35 to 70	
G6 – Gloss finish	70 to 85	
G7 – High Gloss finish	More than 85	

- .2 Gloss level ratings of painted surfaces as specified.
- .7 Exterior re-painting:
- .1 Miscellaneous metal (existing metal frames & doors and rainwater leaders).
- .1 REX 5.1D - Alkyd G – GL4, colour to be selected by Departmental Representative unless indicated otherwise.
- .8 Interior painting:
- .1 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock" type material, etc.
- .1 INT 9.2A - Latex , colour and gloss level to match existing.
- .2 Dressed lumber: (window stools).
- .1 INT 6.3B - Alkyd GL 5 finish, colour to match existing unless indicated otherwise.

### **3 EXECUTION**

#### **3.01 GENERAL**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheets.
- .2 Perform preparation and operations for interior painting in accordance with MPI - Architectural Painting Specifications Manual and MPI - Maintenance Repainting Manual except where specified otherwise.

#### **3.02 EXAMINATION**

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.



### **3.03 PREPARATION**

- .1 Protection of in-place conditions:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.
  - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
  - .3 Protect factory finished products and equipment.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, surface hardware on doors, and other surface mounted equipment, fittings and fastenings (if required) prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
  - .4 Clean and prepare surfaces in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual specific requirements and coating manufacturer's recommendations.
  - .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
  - .6 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
    - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
    - .2 Apply wood filler to nail holes and cracks.
    - .3 Tint filler to match stains for stained woodwork.
  - .7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
  - .8 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.
  - .9 Touch up of shop primers with primer as specified.
- .3 Finish pre-installation:
  - .1 Paint wooden window stool and apron prior to installation.

### **3.04 APPLICATION**

- .1 Paint only after prepared surfaces have been accepted by Departmental Representative.
- .2 Use method of application approved by Departmental Representative.
  - .1 Conform to manufacturer's application recommendations.
- .3 Apply coats of paint in continuous film of uniform thickness.
  - .1 Repaint thin spots or bare areas before next coat of paint is applied.
- .4 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

- .5 Sand and dust between coats to remove visible defects.
- .6 Finish surfaces both above and below sight lines as specified for surrounding surfaces.
- .7 Touch-up pre-painted surfaces as required.

**3.05 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Store unused paint where directed by Departmental Representative.
  - .2 Remove recycling containers from site and dispose of materials at appropriate facility.
- .4 Place paint defined as hazardous or toxic waste, including tubes and containers, in containers or areas designated for hazardous waste.

**END OF SECTION**