



# Public Works and Government Services Canada

R.087821.001

Requisition Number: EZ899-181195

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

SPECIFICATIONS for:

**Pacific Highway Port of Entry**  
28 – 176 Street, Surrey BC

Project Number: **R.087821.001**

**APPROVED BY:**

  
\_\_\_\_\_  
Regional Manager, AES

2017-08-25  
Date

  
\_\_\_\_\_  
Construction Safety Coordinator

2017-08-22  
Date

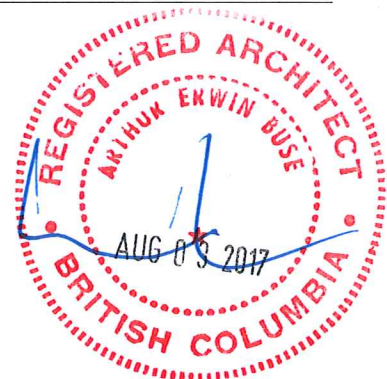
**TENDER:**

Neda Nadiri  
\_\_\_\_\_  
Project Manager

Aug 22, 2017  
Date



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**LIST OF DRAWINGS (Bound Separately)**

Drawing No.	Title	Issued For	Issue Date (MM-DD-YR)
<b>Architectural:</b>			
A000	Consultants, Drawing List, Legend (Symbols), Project Statistics, Abbreviations and General Notes	Tender	8/3/2017
A200	Site Plan	Tender	8/3/2017
A300	Plan - Traffic Bldg & Export Office/Nexus Booth	Tender	8/3/2017
A301	Plan - Commercial Bldg 'A'	Tender	8/3/2017
A700	Details	Tender	8/3/2017

END OF SECTION



## **1 GENERAL**

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

- .1 The work of this contract comprises of the lower exterior building envelope remediation of the Traffic Building, Commercial Building “A” and Export Office which includes the Nexus Primary Inspection Booth at the Pacific Highway Port of Entry, located at 28 – 176 Street, Surrey, 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 Phased and after hours/weekend work as indicated.
  - .2 Temporary hoarding control for phased work as indicated.
  - .3 Export Office/Nexus Primary Inspection Booth, Traffic Building and Commercial Building ‘A’:
    - .1 Temporary partial removal of existing lower aluminum panel cladding (and existing flashing plates) as required to complete work.
    - .2 Removal and replacement of existing lower gypsum sheathing (approximately 300mm) and air barrier as indicated or where required.
    - .3 Removal and replacement of existing lower gypsum sheathing (approximately 300mm) and batt insulation where deteriorated and not indicated on the drawings.
    - .4 Installation of new perforated aluminum flashing.
    - .5 Reinstallation of existing aluminum panel cladding (where removed) with new sealant.
    - .6 Existing louvre/grille installation/repair - two (2).
  - .4 Commercial Building ‘A’: Overhead Doors - four (4):
    - .1 Concrete patching on either side of dock levelers.
    - .2 Vertical door seals:
      - .1 Removal of existing padded vertical door seals.
      - .2 Application of new backer rod and sealants on vertical door joints.
      - .3 Reinstallation of existing padded vertical door seal to Overhead Door #01 only.
- .3 Canada Border Services Agency (CBSA) will occupy premises for normal operations during entire period. Cooperate with Departmental Representative in scheduling operations to minimize conflict and to facilitate usage.

### **1.02 TIME OF COMPLETION**

- .1 Commence work upon notification of acceptance and complete the work including all deficiencies within a maximum of 23 weeks.
- .2 Time is of the essence.
- .3 Contractor to execute remediation work continuously without interruption, compressing the project schedule where possible.
- .4 Contractor to prioritize work on Traffic Building and overhead doors of Commercial Building ‘A’ and may complete the phased work concurrently with the exception of areas indicated and in accordance with Section 01 14 00 – Work Restrictions.
- .5 Contractor may complete work on traffic and commercial building concurrently.

### **1.03 MINIMUM STANDARDS**

- .1 Work to conform to the minimum applicable standards, the National Building Code of Canada 2015 (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.

### **1.04 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. **Drawings have been prepared in colour for clarity purposes and are intended to be printed in colour.** Contractor is responsible for any misinterpretations caused as a result of printing in black and white.

### **1.05 DIVISION OF SPECIFICATIONS**

- .1 The specifications are subdivided in accordance with the 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.

### **1.06 TAXES**

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

### **1.07 REGULATORY REQUIREMENTS**

- .1 Obtain and pay for - Certificates, Licenses and other permits required by regulatory 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.

### **1.08 PROJECT MEETINGS**

- .1 In accordance with Section 01 31 19 – Project Meetings, Departmental Representative will schedule a project start-up meeting following notice of acceptance.
- .2 Agenda to include lines of communication, contact information, scheduling and coordination.
- .3 Subsequent meetings will be called as required. Contractor should allow for project meeting every 2 weeks unless requested otherwise by Departmental Representative.

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

- .1 Use of site:
  - .1 The Pacific Highway Port of Entry will remain operational. Canada Border Services Agency (CBSA) has control over the entire site. All border activities and security controls must remain operational at all times. 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 area and for performance of this work.
  - .4 Be responsible for coordination of all work activities on site.
- .2 Perform work in accordance with Contract documents. Ensure work is carried out in accordance with indicated phasing.
- .3 Do not unreasonably encumber site with material or equipment.
- .4 In accordance with Section 01 56 00 – Temporary Barriers & Enclosures, maintain hoarding as indicated throughout duration of each phased work. Do not exceed areas indicated unless written approval by Departmental Representative is provided. Remove hoarding at the end of each completed phase.
- .5 Execute work with least possible interference or disturbance to normal use.
- .6 Maintain existing services and provide for personnel and visitor access.
- .7 Coordinate temporary security measures with Departmental Representative where security is reduced by work.

## **1.10 HOURS OF WORK**

- .1 The Pacific Highway Port of Entry is operational in accordance with Section 01 14 00 – Work Restrictions.
- .2 Typical contractor hours are 07:00 to 15:00, Monday to Friday, except where after hours and weekend work indicated. Contractor shall give 72 hours notice to Departmental Representative for request of work to be completed outside of normal working hours (subject to CBSA approval).

## **1.11 NON-SMOKING ENVIRONMENT**

- .1 Smoking is not permitted on site.

## **1.12 WORK SCHEDULE**

- .1 Provide detailed project schedule (Gantt Chart) within 5 working days of Award of Contract date in accordance with Section 01 32 16 – Construction Progress Schedule.
  - .1 Priority Phasing: Traffic Building, Export Office/Nexus Primary Inspection Booth and overhead doors at Commercial Building 'A'.
- .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, especially at public entry and exits.

#### **1.13 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.

#### **1.14 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 accepted Submittals.
  - .6 List of Outstanding Submittals.
  - .7 Change Orders.
  - .8 Other Modifications to Contract.
  - .9 Field Reports.
  - .10 Reviewed and approved samples.
  - .11 National Building Code, 2015.
  - .12 Health and Safety Plan and Other Safety Related Documents.
  - .13 Other documents as specified.

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

- .1 In accordance with Section 01 35 33 – Health and Safety Requirements, comply with Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
  - .1 Contractor personnel to wear high visibility safety vests at all times.
- .2 Submit copies of WCB Clearance Letter and WCB Contractor Rating. Submit copy of Final WCB Clearance Letter at completion of project.
- .3 Submit letter stating that Contractor assumes the role of Prime Contractor for the purposes of site safety responsibility and the Workers Compensation Act.
- .4 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.
- .5 Submit copies of work site health and safety meeting minutes, reports or directions issued by Federal, Provincial or Municipal health and safety inspectors, incident and accident reports, and follow-up reports.
- .6 Be responsible for the health and safety of persons on site, safety or property on site and the environment to extend that they may be affected by conduct of Work.

#### **1.16 EXAMINATION**

- .1 Examine site and be familiar and conversant with existing conditions likely to affect work.

- .2 Prior to beginning work, provide a photographic report of surrounding areas, including existing conditions of items included within scope of work and items to be protected (which may be liable to damage or be the subject of subsequent claims).
  - .1 Photographs not to include uniformed staff on duty, vehicles or the public.

#### **1.17 SETTING OUT OF WORK**

- .1 Review existing conditions with contract documents and identify in writing to Departmental Representative of any discrepancies.

#### **1.18 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.

#### **1.19 QUALITY OF WORK**

- .1 Ensure that quality workmanship is performed through use of skilled tradesmen, under supervision of qualified journeyman, with required years of experience as indicated within Technical Sections.
- .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.

#### **1.20 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 Contract drawings and specifications, 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.
  - .3 Facilitate meetings and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
  - .4 Prepare and publish minutes of each meeting.
  - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 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.



- .4 Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.
- .5 Maintain efficient and continuous supervision. Full-time site superintendent required throughout project.

#### **1.21 SUBMITTAL REVIEW**

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

#### **1.22 AS-BUILT DOCUMENTS**

- .1 The Departmental Representative will provide 1 set of paper drawings and specifications, for "as-built" purposes.
- .2 As work progresses, maintain accurate records to show all deviations from the Contract documents including where additional remediation work was completed. Note on as-built specifications and drawings as changes occur.
- .3 **Submit for review copies of red-marked as-built drawings completed to date with each progress claim submission.**

#### **1.23 CLEANING**

- .1 In accordance with Section 01 74 11 – Cleaning, conduct daily cleaning and disposal operations. Comply with local ordinances and anti-pollution laws.
  - .1 Ensure cleanup of the work areas each day after completion of work.

#### **1.24 CONTROL**

- .1 In accordance with 01 56 00 – Temporary Barriers and Enclosures, design, erect and maintain hoarding to support windloads and provide protection as required by the Departmental Representative.
  - 1. Maintain and relocate protection at the end of each phase as work is completed.
- .2 Where work involves removing existing aluminum panels, panels must be removed and reinstalled same day.

#### **1.25 ENVIRONMENTAL PROTECTION**

- .1 In accordance with Section 01 35 43 – Environmental Procedures:
  - .1 Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers.
  - .2 Ensure proper disposal procedures in accordance with all applicable federal, provincial and municipal regulations.

#### **1.26 ADDITIONAL DRAWINGS**

- .1 The Departmental Representative may furnish additional drawings for site instruction clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract documents.

- .2 Electronic copies of the drawings will be available for Contractor use and printing.

**1.27 SYSTEM OF MEASUREMENT**

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

**1.28 FAMILIARITY WITH SITE**

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

**1.29 SUBMISSION OF TENDER**

- .1 Submission of a tender is deemed to be confirmation of the fact that the Tenderer has examined the Contract documents 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 ACCESS AND EGRESS**

- .1 Coordinate construction, staff and delivery vehicles accessing contractor's lay-down area with CBSA Facility Personnel to minimize disturbance to ongoing CBSA operations.
- .2 All deliveries and construction vehicle access which require escort services will require a minimum of 24 hours notice to Departmental Representative so that an escort may be arranged.

### **1.02 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 Contractor personnel to complete initial Security and Safety briefing on first day at site in accordance with Section 01 35 33 – Health & Safety Requirements.
- .3 Utilize existing crosswalks when walking across inspection lanes to adjacent buildings.
- .4 Maintain existing services to building and provide for personnel public access.
- .5 Where security is reduced by work provide temporary means to maintain security as approved by Departmental Representative.
- .6 Refer to Section 01 52 00 – Construction Facilities for sanitary facility requirements.

### **1.03 HOURS OF WORK**

- .1 The Port of Entry operational hours are as follows:
  - .1 Traffic Building: operational 24 hours a day, seven days a week.
  - .2 Commercial Building 'A': operational Monday to Friday (excluding statutory holidays), 08:00 – 17:00 hours.
    - .1 Commercial Truck Lanes: operational 24 hours, seven days a week.
  - .3 Export Office/Nexus Primary Inspection Booth: Export Office is no longer operational however the attached Nexus Primary Inspection Booth is operational from 07:00 – 24:00 hours, seven days a week.
- .2 Low Volume Hours:
  - .1 Traffic Building (Phase T5 and T6) low volume hours are typically Mondays to Thursdays, excluding holidays between 07:00 - 14:00 and 18:00 to 07:00.
  - .2 Export Office low volume hours are typically Mondays to Thursdays, excluding holidays between 10:00 – 14:00.
  - .3 Nexus Primary Inspection Booth low volume hours are typically Mondays to Thursdays, excluding holidays between 08:00 – 12:00.
- .3 Typical contractor hours are 07:00 to 15:00, Monday to Friday, except where after hours and weekend work indicated. Contractor shall give 72 hours notice to Departmental Representative for request of work to be completed outside of normal working hours (subject to CBSA approval).

#### **1.04 REPAIRS TO EXISTING BUILDING**

- .1 Execute work with least possible interference or disturbance to building operations occupants, public and normal use of premises.
- .2 Where aluminum wall panels are removed, completion of work and reinstallation of panels to be done same day.
- .3 Protect all existing finishes.
  - .1 Repair or make good to better condition any damage to existing finishes.
- .4 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 maintains the right to have work completed after operational hours.

#### **1.05 EXISTING SERVICES**

- .1 Contractor will not be allowed to connect to existing data and communication services for his own use.

#### **1.06 SPECIAL REQUIREMENTS**

- .1 Traffic lane closures are anticipated for remediation work adjacent to the Nexus lane (Export Office/Primary Inspection Booth - East Elevation) and Commercial Truck Primary Inspection Lane (Traffic Building - East Elevation):
  - .1 **Request for lane closure requires a minimum of one (1) week notice and must be approved by Departmental Representative. During lane closure, provide wayfinding signage for pedestrian and vehicular traffic.**
  - .2 Nexus lane closure work must remain operational daily from 07:00 to 24:00 hours, seven days a week. Work is limited to 00:30 to 06:30 hours.
- .2 Pedestrian Walkways: must remain operational.
- .3 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .4 Keep within limits of work and avenues of ingress and egress.
- .5 Deliver materials outside of peak traffic hours, typically 10:00 to 14:00 and 18:00 to 07:00 and to be confirmed by Departmental Representative.

#### **1.07 SECURITY**

- .1 Obey the following CBSA Security Directives:
  - .1 All crew members are to sign in/out with the CBSA Superintendent at the beginning and end of each shift.
- .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 exterior work areas. Movement within CBSA restricted areas must be approved and require CBSA escort.
- .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.
- .6 Act professionally at all times. No foul language or rude behavior.
- .7 Do not interact with the travelling public.
- .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).
  - .1 Do not take directions from uniformed officers or PWGSC building maintenance personnel regarding remediation work.
- .9 No music permitted.

**1.08 BUILDING SMOKING ENVIRONMENT**

- .1 Smoking is not permitted.

**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 pre-construction project meeting and provide physical space for all meetings.
- .2 Contractor to assume responsibility for setting subsequent meeting times and recording and distributing meeting minutes.
  - .1 Reproduce and distribute copies of minutes within three (3) days after meetings and transmit to Departmental Representative, meeting participants and affected parties not in attendance.
  - .2 Include significant proceedings and decisions. Identify actions by parties.
- .3 Contractor to attend project meetings throughout the progress of the work and at the call of Departmental Representative.

### **1.02 PRECONSTRUCTION MEETING**

- .1 Departmental Representative will:
  - .1 Within ten (10) days after award of Contract, 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 Provide Agenda. 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 and Bar (Gantt) Chart.
    - .3 Schedule of submissions and samples 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 and hoarding in accordance with Section 01 56 00 Temporary Barriers & Enclosures.
    - .5 Delivery schedule of specified materials.
    - .6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
    - .7 Record drawings in accordance with Section 01 78 00 - Closeout Submittals.
    - .8 Take-over procedures, acceptance, warranties in accordance with Section 01 77 00 - Closeout Procedures.
    - .9 Monthly progress claims, administrative procedures, photographs, hold backs.
    - .10 Insurances, transcript of policies.



### **1.03 PROGRESS MEETINGS**

- .1 Contractor will:
- .2 During course of Work and up to project completion, schedule progress meetings every two weeks. Additional meetings will be scheduled to resolve extraordinary issues as required.
- .3 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .4 Notify parties minimum one week (7) days prior to meetings.
- .5 Contractor will record minutes of progress meetings and circulate to attending parties and affected parties not in attendance.
- .6 Provide Agenda. 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 DEFINITIONS**

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

### **1.02 REQUIREMENTS**

- .1 Ensure Schedules are practical and remain within specified Contract duration.
  - .1 Priority Phasing: Traffic Building, Export Office/Nexus Primary Inspection Booth and overhead doors at Commercial Building 'A'.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress and Final Certificate as defined times of completion are of essence of this contract.

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

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of Contract Award.

### **1.04 PROJECT SCHEDULE**

- .1 Ensure detailed Project Schedule is prepared and printed in colour and includes as minimum milestone and activity types as follows:
  - .1 Award.
  - .2 Mobilization.
  - .3 Hoarding.
  - .4 Submittals and samples.
  - .5 Preparation.
  - .6 Mock-up review.
  - .7 Phasing.
  - .8 Substantial Completion.
  - .9 Total Completion.

### **1.05 PROJECT SCHEDULE REPORTING**

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

### **1.06 PROJECT MEETINGS**

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

## **2 PRODUCTS**

### **2.01 NOT USED**

- .1 Not used.

## **3 EXECUTION**

### **3.01 NOT USED**

- .1 Not used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 03 01 00 - Maintenance of Concrete.
- .2 Section 06 16 43 – Gypsum Sheathing.
- .3 Section 07 27 00 – Air Barriers and Membranes.
- .4 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .5 Section 07 92 00 – Joint Sealants.
- .6 Section 08 90 00 – Louvres and Vents.
- .7 Section 11 13 16 – Loading Dock Seals.

### **1.02 ADMINISTRATIVE**

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Present product data, samples and mock-ups in SI Metric units.
  - .1 Where items or information is not produced in SI Metric units converted values are acceptable.
- .3 Review submittals prior to submission to Departmental Representative verifying compliance with contract documents. 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.**
  - .1 Verify affected adjacent Work are coordinated.
  - .2 Project schedule will not be extended due to Departmental Representative re-review of resubmitted submittals.
  - .3 Keep one reviewed copy of each reviewed submittal on site.
- .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 Do not proceed with work or order construction materials or products until relevant submissions are reviewed and accepted by the Departmental Representative.

### **1.03 SUBMISSION REQUIREMENTS**

- .1 Coordinate each submission with the requirements of the work and the Contract documents. Incomplete submissions will not be reviewed until all related information is available.

- .2 Accompany submissions with transmittal letter, in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .3 Submissions shall 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 review of submissions, verification of field measurements and compliance with Contract documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .4 After Departmental Representative's review, distribute copies. Keep one reviewed copy of each submission on site.

#### **1.04 PRODUCT DATA**

- .1 Product data: manufacturers' catalogue sheets, MSDS sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products or any other specified information.
  - .1 Submit electronic copies of product data.
  - .2 Delete information not applicable to project.
  - .3 Supplement standard information to provide details applicable to project.
- .2 Cross-reference product data information to applicable portions of Contract documents.

#### **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 at beginning of project for Details 2A and 4A and in accordance with Section 01 45 00 - Quality Control and technical sections.

**1.07 PROGRESS SCHEDULE**

- .1 Submit work schedule and cost breakdown in accordance with Section 01 11 55 – General Instructions and Section 01 32 16 – Construction Progress Schedule.

**1.08 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic copy of colour digital photographic report in accordance with Section 01 11 55 – General Instructions.
  - .1 Photographs not to include uniformed staff on duty, vehicles or the public.
  - .2 Submit photos of each phase at end of project and include updated consolidated report in Operating and Maintenance Manual in accordance with Section 01 78 00 – Closeout Submittals.

**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 Canada Occupational Safety and Health Regulations.
  - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC) 2015
  - .1 Part 8 – Safety Measures at Construction and Demolition Sites.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Safety Data Sheets (SDS).
- .4 Province of British Columbia
  - .1 Workers Compensation Act Part 3 – Occupational Health and Safety, RSBC 1996 - Updated 2006.

### **1.02 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.

### **1.03 COMPLIANCE WITH REGULATIONS**

- .1 Contractor personnel are each to complete an initial Security and Safety briefing on first day at site. Briefing is approximately ten (10) minutes in duration and will be coordinated by the Departmental Representative.
- .2 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.
- .3 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.

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

- .1 Submit to Departmental Representative, submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Submit the following:
  - .1 Health and Safety Plan.
  - .2 Copies of reports or directions issued by Federal and Provincial health and safety inspectors.
  - .3 Copies of incident and accident reports.



- .4 Complete set of Safety Data Sheets (SDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
- .5 Emergency Procedures.
- .4 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.
- .5 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.
- .6 Submission and resubmission of the Health and Safety Plan 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.

#### **1.05 RESPONSIBILITY**

- .1 Assume responsibility as the Prime Contractor for work under the 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 and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

#### **1.06 HEALTH AND SAFETY COORDINATOR**

- .1 The Health and Safety Coordinator must:
  - .1 Be responsible for completing all health and safety training sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
  - .2 Be responsible for implementing, enforcing daily and monitoring site-specific Health and Safety Plan.
  - .3 Be on site during execution of Work.

#### **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 CBSA staff and public pedestrian and vehicular traffic.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.

## **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 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.

## **1.10 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, 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 works.
- .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.

### **1.11 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 including the location of the nearest hospital and route to hospital.
  - .4 Departmental Representative 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 which may be affected if the risk extends beyond the workplace.
  - .6 Notify Departmental Representative site staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
  - .1 Work at heights.
  - .2 Work with hazardous substances.
  - .3 Workplaces where there are persons who require physical assistance to be moved.
- .4 Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

### **1.12 HAZARDOUS PRODUCTS**

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous regarding labelling and provision of Safety Data Sheets (SDS) 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 SDS and WHMIS documents as per Section 01 33 00 - Submittal Procedures.

### **1.13 OVERLOADING**

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

### **1.14 POWDER-ACTUATED DEVICES**

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

### **1.15 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.

#### **1.16 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, Departmental Representative resulting from false alarms.

#### **1.17 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.

#### **1.18 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 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 Safety Data Sheets (SDS).
  - .10 List of names of Health and Safety Representative.
- .2 Post all Safety Data Sheets (SDS) 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 exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

#### **1.19 MEETINGS**

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

#### **1.20 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 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.

### **1.02 FIRES**

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

### **1.03 DRAINAGE**

- .1 Ensure pumped water into waterways, sewer or drainage systems is free of suspended and volatile materials.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

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

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 03 01 00 – Maintenance of Concrete
- .2 Section 06 16 43 – Gypsum Sheathing.
- .3 Section 07 27 00 – Air Barriers and Membranes.
- .4 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .5 Section 07 92 00 – Joint Sealants.
- .6 Section 08 90 00 – Louvres and Vents.
- .7 Section 11 13 16 – Loading Dock Seals.

### **1.02 RECORD OF EXISTING CONDITIONS**

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

### **1.03 PROCEDURES**

- .1 Notify Departmental Representative 24 hours in advance of requirement for field review in order that attendance arrangements can be made.
- .2 Submit samples and/or materials as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

### **1.04 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, Departmental Representative 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.

### **1.05 MOCK-UPS**

- .1 Prepare mock-ups as specifically requested in technical Sections for on-site review by applicable parties including Departmental Representative, Contractor and Sub-Contractor.
  - .1 Construct in locations as indicated or as requested by Departmental Representative.
  - .2 Allow 24 hours for review of mock-up.



- .2 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.
- .3 Mock-ups may remain as part of Work upon acceptance by the Departmental Representative.
- .4 Mock-ups which have not been accepted are to be removed at Contractor's expense. Prepare revised mock-up for re-review 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) as amended:
  - .1 CAN/CSA Z321-96(R2006), 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 STORAGE FACILITIES**

- .1 Contractor to provide storage space, located as indicated.

### **1.04 WATER SUPPLY**

- .1 Water supply is available at existing buildings and may be used for construction purposes at no cost.
  - .1 Hose bib locations to be confirmed by Departmental Representative.

### **1.05 POWER AND LIGHT**

- .1 Departmental Representative will pay for power during construction for temporary lighting and operating of power tools. Contractor is to provide for connection to existing power to serve requirements. Do not overload existing power supply.
- .2 Provide and maintain temporary lighting throughout project. Ensure level of illumination on is not less than 162 lx.

### **1.06 TEMPORARY COMMUNICATION FACILITIES**

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

### **1.07 SANITARY FACILITIES**

- .1 Refer to Section 01 52 00 – Construction Facilities.

### **1.08 REMOVAL OF TEMPORARY FACILITIES**

- .1 Remove temporary facilities from site when directed by the Departmental Representative and as needed to continue remediation work.

### **1.09 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 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.02 INSTALLATION AND REMOVAL**

- .1 Submit site plan confirming laydown location and dimensions of area to be fenced, number of trailers to be used and details of fence installation.
- .2 Provide construction facilities in order to execute work expeditiously.
- .3 Reinstate remediated areas to same state or better than before start of project.

**1.03 HOARDING AND ENCLOSURES**

- .1 Prepare and submit phased hoarding plan in accordance with Section 01 56 00 – Temporary Barriers and Enclosures.

**1.04 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 or existing facilities.

**1.05 PARKING**

- .1 Three (3) parking spots are permitted on-site as indicated.

**1.06 SECURITY**

- .1 PWGSC not responsible for security of Contractor equipment and construction facilities.

**1.07 OFFICES**

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

**1.08 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.

**1.09 SANITARY FACILITIES**

- .1 Contractor to provide sanitary facilities, to be located within Contractor laydown area.

**1.10 CLEAN-UP**

- .1 In accordance with Section 01 74 11 – Cleaning, remove construction debris, waste materials, packaging material from work site daily.

**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 INSTALLATION AND REMOVAL**

- .1 Prepare and submit hoarding plan indicating proposed dimensions, materials and interface with existing structures and maintained walkways and egress.

### **1.02 HOARDING**

- .1 Erect hoarding in accordance with phasing. Design hoarding to withstand local environmental conditions.
- .2 Hoarding to phased areas;
  - .1 Self-supporting 1.8m high metal fence panels complete with fabric mesh with 100% opaque blockage.
  - .2 Traffic Building – as indicated, hoarding not to exceed 1.375m high for CBSA personnel visibility.
  - .3 Traffic Building exterior curtain wall – as indicated, apply 100% opaque privacy screen to 1.8m high so interior is not visible during work.
- .3 Hoarding to be removed during weekends and statutory holidays.
- .4 Provide protection of work as required to keep work dry and maintain project schedule.
- .5 Maintain emergency exits and public access areas as indicated.
- .6 Protect site from damage by equipment and construction procedures.

### **1.03 GUARD RAILS AND BARRICADES**

- .1 Provide as required by governing authorities.

### **1.04 PUBLIC TRAFFIC FLOW**

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

### **1.05 FIRE ROUTES**

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

### **1.06 PROTECTION**

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

### **1.07 TURN OVER**

- .1 Contractor to provide 48 hours notice to Departmental Representative before proceeding to next phase.
- .2 Remove and relocate hoarding as each phase is completed.

- .3 Be responsible for damage incurred due to lack of or improper protection.
- .4 Conduct final cleaning as each phase is completed in accordance with Section 01 74 11 – Cleaning.

## **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. Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .2 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.
  - .1 Cost for such testing will be borne 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.

### **1.03 AVAILABILITY**

- .1 Review product delivery requirements and if delays in the supply of products are foreseeable, request approval of an alternative product that meets the schedule prior to closing of tender. Except where noted in 1.03.2, substitutions which were not previously approved prior to tender close will not be considered and the proponent will be responsible for all costs associated with the delivery and installation of the specified product.
- .2 Immediately upon signing Contract, re-review product delivery requirements and confirm foreseeable supply delays for items. If undue delays in supply of products occurs, 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 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, apply, 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, for Departmental Representative to establish course of action.
- .3 Improper application, installation or erection of products due to failure in complying with these requirements, authorizes the 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 Be responsible for coordination.
- .2 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

**1.09 PROTECTION OF EXISTING BUILDING AND WORK IN PROGRESS**

- .1 Protect existing building components and finishes from damage. Repair damaged components and finishes according to Departmental Representative's specifications, to better condition.

**1.10 CONTRACTOR'S OPTIONS FOR SELECTION OF PRODUCTS FOR TENDERING**

- .1 Products are specified by 'Prescriptive' specifications: 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.
- .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.

#### **1.11 SUBSTITUTION AFTER CONTRACT AWARD**

- .1 No substitutions are permitted without prior written approval of the Departmental Representative.
- .2 Proposals for substitutions due to unduly delays submitted after Contract award 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, the Contractor will assume full responsibility and costs when substitution affects other work on the project and 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 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance 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.
- .3 Include in request:
  - .1 Identification of project.
  - .2 Location and description of affected Work.
  - .3 Statement on necessity alteration.
  - .4 Description of proposed Work, and products to be used.
  - .5 Alternatives to cutting and patching.
  - .6 Effect on Work to on-going operations.
  - .7 Written permission of affected separate contractor.
  - .8 Date and time work will be executed.

### **1.02 MATERIALS**

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 61 00 – Common Product Requirements.

### **1.03 PREPARATION**

- .1 Inspect existing conditions, including elements subject to damage or movement during remediation work.
- .2 After uncovering, inspect conditions affecting performance of Work and review existing conditions with Departmental Representative.
- .3 Beginning of work means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings, if required; 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.

### **1.04 EXECUTION**

- .1 Temporarily remove and protect items required to complete Work, including aluminum wall panels and fasteners, overhead padded door seals and exterior receptacle covers.
  - .1 Where aluminum wall panels are removed, completion of work and reinstallation of panels to be done same day in accordance with Section 01 14 00- Work Restrictions.
- .2 Prepare mock-ups as indicated in technical specifications.

- .3 Report to Departmental Representative where gypsum wall deterioration and batt insulation deterioration is discovered - beyond scope indicated on drawings. Departmental Representative will provide direction regarding replacement of insulation, gypsum board and air barrier.
- .4 Remove and replace defective and non-conforming Work.
- .5 Execute Work by methods to avoid damage to other Work and finishes.
- .6 Restore work with new products in accordance with requirements of Contract Documents.
- .7 As each phased work is completed, reinstall temporarily removed items, including aluminum panels and fasteners, overhead padded door seals and exterior receptacle covers to original locations and details in conjunction with the technical sections.

**1.05 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for disposal 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 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Provide on-site containers in laydown area for collection of waste materials and debris.
  - .1 Remove waste materials from site at daily regularly scheduled times and dispose of at off site authorized facilities.
  - .2 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .3 Where work occurred that day, broom clean walkways.
- .4 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .5 Use only cleaning materials as recommended by product manufacturer.
- .6 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 and prior to final review, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for turnover to Owner.
- .3 Clean reinstalled and previously protected components. Confirm with Departmental Representative cleaning products to be used for existing surfaces.
- .4 Remove dirt and other disfiguration from those exterior surfaces included in scope of work.
- .5 Repair damage to as good or better condition.

### **1.03 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for disposal 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 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.

### **1.02 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, cleaning, 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 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.

### **1.03 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.
  - .1 Locate containers in locations to facilitate deposit of materials without hindering daily operations as directed by Departmental Representative. Relocate to Contractor laydown area after each shift

### **1.04 STORAGE, HANDLING AND PROTECTION**

- .1 Store and protect materials to be reused in secured laydown area.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .4 Protect existing structural components from movement or damage.
- .5 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.

### **1.05 DISPOSAL OF WASTES**

- .1 Use of Owners waste and recycling bins is not permitted.
- .2 Do not bury rubbish or waste materials.
- .3 Do not dispose of waste, volatile materials, mineral spirits, paint thinner, coatings into waterways, storm, or sanitary sewers.



**1.06 SCHEDULING**

- .1 Coordinate 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 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 daily 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 06 16 43 – Gypsum Sheathing.
- .2 Section 07 27 00 – Air Barriers and Membranes.
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .4 Section 07 92 00 – Joint Sealants.
- .5 Section 08 90 00 – Louvres and Vents.
- .6 Section 11 13 16 – Loading Dock Seals.

### **1.02 ADMINISTRATIVE REQUIREMENTS**

- .1 Acceptance of Work Procedures:
  - .1 Contractor's Inspection: Contractor to conduct inspection of Work at completion of each Phase and 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.
    - .2 Request Departmental Representative review.
  - .2 Departmental Representative's review:
    - .1 Departmental Representative and Contractor to review Work at completion of each Phase and identify defects and deficiencies.
    - .2 Contractor to correct Work as directed.
  - .3 Completion Tasks: submit written certificates that tasks have been performed as follows:
    - .1 Work: completed and reviewed for compliance with Contract Documents.
    - .2 Defects: corrected and deficiencies completed.
    - .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 in accordance with phased construction.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - 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 Contractor to turnover areas of work to Owner as each phased work is completed with Substantial completion granted at end of project upon completion of all phases.
- .2 Pre-warranty Meeting (End of Project):
  - .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 Three (3) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, two (2) final hard copies and one electronic copy of operating and maintenance manuals. Substantial completion will not be considered until this submission is completed.
- .3 Defective products will be rejected, regardless of previous reviews. Replace products at own expense.

### **1.03 OPERATING AND MAINTENANCE MANUALS**

- .1 Total performance will not be considered until this submission is complete.
- .2 Binder Format:
  - .1 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
  - .2 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
  - .3 Arrange content by Section numbers and sequence of the Table of Contents according to the contract documents Table of Contents.
    - .1 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment. For each product or system:
      - .2 Text: manufacturer's printed data, or typewritten data.
      - .3 Contents:
  - .4 Table of Contents (for each volume), provide the following.
    - .1 Title of project.

- .2 Date of submission
- .3 Certificate of Substantial Completion.
- .4 Contractor's 1 year Warranty.
- .5 Names, addresses, telephone numbers and email addresses of Consultant, Contractor and Sub-Contractors with name of responsible parties.
- .6 Schedule of products and systems, indexed to content of volume.
  - .1 For each product or system: List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .5 Photographic Report: of before and after conditions in accordance with Section 01 11 55 – General Instructions and Section 01 33 00 – Submittal Procedures.
- .6 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .7 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .8 Typewritten Text: as required to supplement product data.
- .3 As-Built Drawings and Documents:
  - .1 Provide one electronic and one hard copy for each binder:
    - .1 As-built contract drawings and shop drawings: record changes in red ink as work progresses legibly mark each item to record actual remediation work, including:
      - .1 Changes made by change orders.
      - .2 Change Orders and other modifications to Contract.
      - .3 Details not on original Contract drawings.
    - .2 As-built 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 Provide digital photos, if requested, for site records.
- .4 Warranties:
  - .1 Provide General Contractor's original signed 1 year warranty and Subcontractor's original warranties with an effective date as of Substantial Completion (upon completion of all phases).
  - .2 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
    - .1 Separate each original warranty with index tab sheets keyed in accordance with Specification Table of Contents.
    - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
    - .3 Obtain warranties executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of applicable item of work.
    - .4 Verify that documents are in proper form, are notarized and contain full information:
      - .1 Warranty Addressee Name.
      - .2 Project name.
      - .3 Project address.
      - .4 Warranty start date.
      - .5 Warranty period.

- .5 Co-execute submittals when required.
- .6 Retain warranties until time specified for submittal.
- .7 Where project specific warranties are not available from manufacturers (with only generic warranties available), attach a copy of purchase invoice of materials.
- .3 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .4 Conduct joint 9 month warranty inspection, measured from time of acceptance, by Departmental Representative.
- .5 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .6 Written verification to follow oral instructions.
- .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

## **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 SUMMARY**

- .1 Section includes the patching of concrete at overhead door loading dock levelers.

### **1.02 REFERENCES**

- .1 Reference Standards:
  - .1 ASTM International
    - .1 ASTM C 109/C109M-16a, Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
    - .2 ASTM C 882/C882M-13a, Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.

### **1.03 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit manufacturer's installation instructions, printed product literature and data sheets and include product characteristics, performance criteria.
- .3 Provide electronic copies of Workplace Hazardous Materials Information System (WHMIS) - Safety Data Sheets (SDS) in accordance with Section 01 35 33 - Health and Safety Requirements.

### **1.04 QUALITY ASSURANCE**

- .1 Quality Assurance: in accordance with Section 01 45 00 - Quality Control.

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

- .1 Deliver products in original packaging, labeled with product identification, manufacturer, batch and shelf life.
- .2 Store products in a dry area, protected from sunlight and in accordance with manufacturer's directions.
- .3 Packaging Waste Management: remove for reuse and return of packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Polymer modified, shrinkage compensated, rapid setting high strength, hydraulic cement based repair mortar to ASTM C928 R-2:
  - .1 Compressive Strength: 13.8MPa at 3 hours, 27.6 MPa at 24 hours, 34.5 MPa at 7 days and 41.4 MPa at 28 days to ASTM C109.
  - .2 Slant Shear Bond Strength: 6.9MPa at 24 hours, 10.3 MPa at 7 days and 17.2 MPa at 28 days to ASTM C882.



### **3 EXECUTION**

#### **3.01 PREPARATION**

- .1 Prepare surfaces in accordance with manufacturer's written instructions:
  - .1 Remove all spalled and unsound concrete from area to be repaired.
  - .2 Clean surfaces to be repaired of all materials including dust, oil, dirt and grease.
  - .3 Dampen with clean water before patching and remove standing water.

#### **3.02 INSTALLATION/APPLICATION**

- .1 Mix in accordance with manufacturers written instruction.
  - .1 Do not mix more than can be applied within recommended time periods.
  - .2 Do not re-temper with additional water.
- .2 Apply a thin layer with heavy trowel pressure and then build up to the desired thickness to fill cavity.
  - .1 After initial set, trim and shape material to be flush with adjacent surfaces.
- .3 Finishing and curing: keep area covered or damp during curing. Remove excess material before curing is complete.

#### **3.03 PAINTING**

- .1 Paint remediated areas with two coats to match existing colour.
  - .1 EXT 3.1C - Waterborne light industrial.
    - .1 Gloss level 3 (Eggshell) or to match existing gloss level if different.

#### **3.04 CLEANING**

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

**END OF SECTION**

## **1.01 SUMMARY**

- .1 Section includes the replacement of deteriorated gypsum sheathing as indicated and gypsum sheathing and batt insulation (where found deteriorated).

## **1.02 REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM C473-16, Standard Test Methods for Physical Testing of Gypsum Panel Products.
  - .2 ASTM C518-15, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
  - .3 ASTM C 553-13, Specification for Mineral Fibre Blanket Thermal Insulation for Commercial and Industrial Applications.
  - .4 ASTM C1002-16, Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .5 ASTM C1177/C1177M-13, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
  - .6 ASTM C1280-13a, Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing.
  - .7 ASTM D3273-16, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
  - .8 ASTM D6329-98(2015), Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers.
  - .9 ASTM E96/E96M-16, Standard Test Methods for Water Vapor Transmission of Materials.
- .2 Gypsum Association (GA):
  - .1 GA-253, Application of Gypsum Sheathing.
- .3 National Building Code (NBC), 2015.

## **1.03 SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit manufacturer's installation instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Provide electronic copies of Workplace Hazardous Materials Information System (WHMIS) - Safety Data Sheets (SDS) in accordance with Section 01 35 33 - Health and Safety Requirements.
- .4 Closeout Submittals: in accordance with Section 01 78 00 - Closeout Submittals.
  - .1 Warranty:
    - .1 Provide manufacturers' standard warranty.
    - .2 Warranty is in addition to, and not a limitation of other rights the Owner may have under Contract Documents.
  - .2 Operating & Maintenance Manuals:
    - .1 Submit product data for incorporation into manual and include following:
      - .1 Manufacturer's product number, product name, type.

#### **1.04 QUALITY ASSURANCE**

- .1 Mock-Up:
  - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control and in conjunction with:
    - .1 Section 07 27 00 – Air Barriers and Membranes.
    - .2 Section 07 62 00 – Sheet Metal Flashing and Trim.
    - .3 Section 07 92 00 – Joint Sealants.
  - .2 Locate for details 2A and 4A or where directed by Departmental Representative.
  - .3 Allow 24 hours for review of mock-up by Departmental Representative before proceeding with Work.
  - .4 Mock-up accepted by Departmental Representative may remain as part of finished work.

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

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

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

- .1 Separate waste materials for reuse, recycling and disposal in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials.

### **2 PRODUCTS**

- .1 Glass mat gypsum substrate sheathing: to ASTM C 1177/C 1177M.
  - .1 Thickness: 13mm, unless indicated otherwise.
  - .2 Edges: square.
  - .3 Surfacing: fiberglass mat on face, back and long edges.
  - .4 Flexural strength, parallel: >356N to ASTM C473.
  - .5 Humidified Deflection: not more than 6mm to ASTM C1777.
  - .6 Permeance: not less than 23 perms to ASTM E96.
  - .7 R-value: 0.079K•m<sup>2</sup>/W to ASTM C518.
  - .8 Mould resistance: 10 to ASTM D3273.
  - .9 Acceptable products:
    - .1 DensGlass Sheathing by Georgia-Pacific Gypsum LLC.
    - .2 CGC Securock Glass-Mat Sheathing by CGC.
    - .3 GlasRock by Certaineed.
- .2 Accessories:
  - .1 Steel drill screws: to ASTM C 1002.
  - .2 Batt and blanket mineral fibre (where found deteriorated): to ASTM C 553, R20.

### **3 EXECUTION**

#### **3.01 PREPARATION**

- .1 Temporarily remove existing aluminum cladding fasteners and store for later reinstallation to same locations.

### **3.02 EXAMINATION**

- .1 Verification of Conditions: verify condition of substrates previously installed under other Sections or Contracts are acceptable for sheathing installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery and where deteriorated insulation exists due to deteriorated gypsum board.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

### **3.03 BLANKET INSULATION**

- .1 Before installing new gypsum sheathing, replace existing blanket insulation where deteriorated.
  - .1 Cut to size and snugly fit into wall assembly cavity.
  - .2 Indicate locations on Contractor's as-built drawings where insulation replaced.

### **3.04 APPLICATION**

- .1 Install gypsum board sheathing to ASTM C1280.
- .2 Apply single layer gypsum board of same size as that as being replaced to steel framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
- .3 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.
- .4 Install air barrier and sheet flashing in accordance with Section 07 27 00 – Air Barriers and Membranes.

### **3.05 CLEANING**

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

### **3.06 PROTECTION**

- .1 Protect installed sheathing in accordance with manufacturer's written recommendations.
- .2 Repair damage to adjacent materials caused by sheathing installation.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 06 16 43 – Gypsum Sheathing.
- .2 Section 07 62 00 – Sheet Metal Flashing and Trim.

### **1.02 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM D882-12, Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
  - .2 ASTM D1204-14, Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature.
  - .3 ASTM D1876-08(2015)e1, Standard Test Method for Peel Resistance of Adhesives (T-Peel Test).
  - .4 ASTM D1970/D1970M-17, Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
  - .5 ASTM D2178/D2178M-15a, Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
  - .6 ASTM D2357-11(2016), Standard for Qualitative Classification of Surfactants by Infrared Absorption.
  - .7 ASTM D3330/D3330M-04(2010), Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape.
  - .8 ASTM E-84-16, Standard Test Method for Surface Burning Characteristics of Building Materials.
  - .9 ASTM E-96-16, Standard Test Methods for Water Vapor Transmission of Materials.
  - .10 ASTM E 2357-11, Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
- .3 Underwriters Laboratories of Canada (ULC)
  - .1 CAN/ULC-S741-08(R2016), Standard for Air Barrier Materials - Specification.
  - CAN/ULC-S742-11(R2016), Standard for Air Barrier Assemblies - Specification.
- .4 National Building Code (NBC), 2015 and amendments.

### **1.03 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.
  - .2 Submit WHMIS SDS - Safety Data Sheets.
- .3 Closeout Submittals: in accordance with Section 01 78 00 - Closeout Submittals.
  - .1 Warranty:

- .1 Provide manufacturers' standard warranty.
- .2 Warranty is in addition to, and not a limitation of other rights the Owner may have under Contract Documents.
- .2 Operating & Maintenance Manuals:
  - .1 Submit product data for incorporation into manual and include following:
    - .1 Manufacturer's product number, product name, colour, type and use.

#### **1.04 QUALITY ASSURANCE**

- .1 Qualifications:
  - .1 Applicator: company specializing in performing work of this section with minimum 3 years documented experience with installation of air barrier systems.
- .2 Mock-up:
  - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control and in conjunction with:
    - .1 Section 06 16 43 – Gypsum Sheathing.
    - .2 Section 07 62 00 – Sheet Metal Flashing and Trim.
    - .3 Section 07 92 00 – Joint Sealants.
  - .2 Locate for details 2A and 4A or where directed by Departmental Representative.
  - .3 Allow 24 hours for review of mock-up by Departmental Representative before proceeding with Work.
  - .4 Mock-up accepted by Departmental Representative may remain as part of finished work.

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

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

#### **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.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal off-site at authorized facilities.

#### **1.07 SEQUENCING**

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

### **2 PRODUCTS**

#### **2.01 DESIGN CRITERIA**

- .1 Continuous air barrier system in accordance with CAN/ULC-S742 Air Barrier Assemblies Specification or ASTM E2357.
- .2 Air leakage characteristic not greater than 0.02 L/(sm<sup>2</sup>) measured at an air pressure difference of 75 Pa or conform to CAN/ULC-S741.

- .1 Air pressure loads in accordance with NBC Requirements.

## **2.02 SHEET MATERIALS**

- .1 Air Barrier and Flashing Membrane: self-adhesive vapour permeable, tri-laminated polypropylene.
  - .1 Thickness: >0.5mm
  - .2 Tensile strength (kN/m): (MD) = >5.9 - (XD) = >3.6 TO ASTM D882.
  - .3 Tear resistance (N): >535 to ASTM E154
  - .4 Water vapour permeability:
    - .1 ASTM E96-B (perm): >16.
    - .2 ASTM E96-A (perm): >10.
  - .5 Air permeability 75 Pa (L/sec\* m<sup>2</sup>): 0.0147 to 0.0025 to ASTM E2178.
  - .6 Air leakage resistance @ 75 Pa: pass to ASTM E2357.
  - .7 Air leakage classification: A1 to CAN/ULC S742.
  - .8 Nail sealability: Pass to ASTM D1970 modified.
  - .9 Flame spread: Class A, to ASTM E84.
  - .10 Acceptable product:
    - .1 Sopraseal Stick VP by Soprema.
    - .2 Blueskin VP160 by Henry.
    - .3 Redzone Pro by Resisto.
- .2 Primer: as recommended by Manufacturer for substrate installation.

## **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 work of this section.
- .2 Ensure surfaces are clean, dry, sound, smooth, continuous and comply with air barrier and membrane manufacturer's requirements.
- .3 Report unsatisfactory conditions to Departmental Representative in writing.
  - .1 Do not start work until deficiencies have been corrected.
  - .2 Beginning of Work implies acceptance of conditions.

### **3.03 PREPARATION**

- .1 Remove loose or foreign matter, which might impair adhesion of materials.
- .2 Ensure substrates are clean of oil or excess dust.
- .3 Ensure substrates are free of surface moisture prior to application of self-adhesive membrane and primer.



### **3.04 INSTALLATION**

- .1 Prime and install materials in accordance with manufacturer's instructions and time frames.
- .2 Lap new membrane under existing by at least 75mm and seal existing membrane to new with same new membrane or compatible sealant or tape.
- .3 Holes and tears in the membrane must be repaired with vapour permeable air barrier membrane material. The repaired area to exceed the affected surface area by a minimum of 100 mm. The membrane piece applied for the repair must be sealed around its edges with waterproofing mastic.
- .4 All small protrusions (pipes, etc.) through the waterproofing membrane, should be pre-stripped with a membrane and sealed with waterproofing mastic.
- .5 Using roller, apply pressure over entire membrane surface to ensure uniform adhesion.

### **3.05 CLEANING**

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

### **3.06 PROTECTION OF WORK**

- .1 On same day, install flashing in accordance with Section 07 62 00 – Sheet Metal Flashing and Trim and reinstall aluminum panels with sealant.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 07 27 00 – Air Barriers and Membranes.

### **1.02 REFERENCES**

- .1 The Aluminum Association Inc. (AAI)
  - .1 AAI-Aluminum Sheet Metal Work in Building Construction, current edition.
  - .2 AAI DAF45-03(2009), Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials International (ASTM)
  - .1 ASTM B 209-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Safety Data Sheets (SDS).

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

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide manufacturer's printed product literature, specifications, installation instructions and datasheets. Include product characteristics, performance criteria, and limitations.
- .3 Provide copies of Workplace Hazardous Materials Information System (WHMIS) - Safety Data Sheets (SDS) in accordance with Section 01 35 33 - Health and Safety Requirements.
- .4 Samples:
  - .1 Submit duplicate samples of flashing material and finish.

### **1.04 QUALITY ASSURANCE**

- .1 Mock-up:
  - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control and in conjunction with:
    - .1 Section 06 16 43 – Gypsum Sheathing.
    - .2 Section 07 27 00 – Air Barriers and Membranes.
    - .3 Section 07 92 00 – Joint Sealants.
  - .2 Locate for details 2A and 4A or where directed by Departmental Representative.
  - .3 Allow 24 hours for review of mock-up by Departmental Representative before proceeding with Work.
  - .4 Mock-up accepted by Departmental Representative may remain as part of finished work.

### **1.05 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.

## **2 PRODUCTS**

### **2.01 SHEET METAL MATERIALS**

- .1 Aluminum sheet: plain perforated, mill finish to ASTM B 209.
  - .1 Thickness: 0.813mm.
  - .2 Perforations: 3mm diameter, 5.5mm staggered, at least 40% open area.
  - .3 Vertical legs as indicated.

### **2.02 ACCESSORIES**

- .1 Galvanic corrosion protection tape: for installation of flashing directly to concrete curb.
- .2 Fasteners: of same material as sheet metal, length and thickness suitable for metal flashing application.
  - .1 Flashing to gypsum sheathing: aluminum, type and size to suit application.
  - .2 Flashing to underside of aluminum panel: aluminum, self-tapping pan head, type and size to suit application.
  - .3 Flashing to concrete curb: aluminum, self-tapping hex washer head.

### **2.03 FABRICATION**

- .1 Fabricate aluminum flashings and other sheet aluminum work in accordance with AAI-Aluminum Sheet Metal Work in Building Construction.
- .2 Form pieces in 2400 mm maximum lengths.
  - .1 Make allowance for expansion at joints.
- .3 Hem exposed edges on underside 12 mm, as indicated.
- .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

## **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 At concrete curbs, install galvanic corrosion protection tape.
- .2 Install aluminum flashing and enclosure as detailed.

### **3.03 PROTECTION OF WORK**

- .1 On same day, reinstall existing aluminum wall panels with existing fasteners to original locations and detail with sealant in accordance with Section 07 92 00 – Joint Sealants.

### **3.04 CLEANING**

- .1 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

- .2 Leave work areas clean, free from grease, finger marks and stains.

**END OF SECTION**



## **1 GENERAL**

### **1.01 SUMMARY**

- .1 Section includes the replacement of exterior weatherproofing sealants to aluminum wall panels after reinstallation and to overhead door vertical joints.

### **1.02 REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM)
  - .1 ASTM C 510-16, Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
  - .2 ASTM C 920-14a, Standard Specification for Elastomeric Joint Sealants.
  - .3 ASTM C 1193-16, 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 Safety Data Sheets (SDS).
- .4 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

### **1.03 SUBMITTALS**

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit manufacturer's instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Provide electronic copies of Workplace Hazardous Materials Information System (WHMIS) - Safety Data Sheets (SDS) in accordance with Section 01 35 33 - Health and Safety Requirements.
- .4 Closeout Submittals: in accordance with Section 01 78 00 - Closeout Submittals.
  - .1 Warranty:
    - .1 Provide manufacturers' standard year warranties as follows:
    - .2 Warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
  - .2 Operating & Maintenance Manuals:
    - .1 Submit operating and maintenance data for incorporation into manual and include following:
      - .1 Manufacturer's product number, product name, colour, type and use.

### **1.04 QUALITY ASSURANCE**

- .1 Mock-up:
  - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control and in conjunction with:
    - .1 Section 06 16 43 – Gypsum Sheathing.

- .2 Section 07 27 00 – Air Barriers and Membranes.
- .3 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .2 Locate for details 2A and 4A or where directed by Departmental Representative.
- .3 Allow 24 hours for review of mock-up by Departmental Representative before proceeding with Work.
- .4 Mock-up accepted by Departmental Representative may remain as part of finished work.

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

- .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements and according to manufacturer's written instructions.
  - .1 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.

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

- .1 Collect and separate for disposal packaging material in appropriate on-site bins. Place materials defined as hazardous or toxic in designated containers.
  - .1 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.
  - .2 Divert unused joint sealing material from landfill to municipal hazardous material collections facility.
  - .3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .2 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.

#### **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 or dusty.
- .2 Joint-Width Conditions:
  - .1 Do not proceed with installation of joint sealants where joint widths are less or more 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 Safety Data Sheets (SDS) 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.

## **2 PRODUCTS**

### **2.01 SEALANT MATERIALS**

- .1 Exterior aluminum cladding panels: polyurethane hybrid, one part, non-sag, low-modulus, moisture cure to ASTM C920, Type S (single component), Grade NS (non-sag), Class 35-50, Use NT (non-traffic), colour to match existing aluminum panel.
  - .1 Acceptable products:
    - .1 Dymonic FC by Tremco.
    - .2 SikaHyflex-150 LM by Sika.
    - .3 SMP 740 UV by 3M.
  - .2 Preformed Compressible and Non-Compressible back-up materials.
    - .1 Polyethylene, Urethane, Neoprene or Vinyl Foam.
      - .1 Extruded, closed cell foam backer rod.
      - .2 Size: oversize 30 to 50 %.
    - .2 Bond Breaker Tape.
      - .1 Polymer tape compatible with joint sealant and adjacent materials and recommended by sealant manufacturer.
- .3 Joint Substrate Primer: substrate primer recommended by sealant manufacturer for application.
- .4 Cleaners: non-corrosive and non-staining chemical cleaner compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .5 Masking tape: non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces.

## **3 EXECUTION**

### **3.01 PROTECTION**

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

### **3.02 EXAMINATION**

- .1 Examine joints for compliance with requirements for joint configuration, installation tolerances, condition of joint substrate, and other conditions affecting joint-sealant performance.
  - .1 Notify Departmental Representative and General Contractor in writing of defects or problems, prior to commencing sealant work.

### **3.03 JOINT SURFACE PREPARATION**

- .1 Prepare surfaces in accordance with manufacturer's directions and as noted below.
- .2 Removal of existing joint sealant materials:
  - .1 Cut out and remove joint materials and associated backing materials.



- .2 Clean joints thoroughly immediately before installing joint sealants. Remove foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
- .3 Clean porous and nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

### **3.04 BACKUP MATERIAL**

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint backing to achieve correct joint depth and shape, with approximately 30% compression and in accordance with below joint ratios:
  - .1 Joints up to 13 mm wide: 1:1 width to depth ratio.
  - .2 Joints greater than 13 mm wide: 2:1 width to depth ratio; maximum 13 mm joint depth.

### **3.05 PRIMING**

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

### **3.06 APPLICATION**

- .1 Apply sealant in accordance with ASTM C1193 and manufacturer's written instructions.
  - .1 Apply sealant to depths recommended for application.
  - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
  - .3 Apply in continuous operation from bottom to top of joint vertically and horizontally in a single direction.
  - .4 Apply sealant using gun with proper size nozzle.
  - .5 Use sufficient pressure to fill voids and joints solid.
  - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
  - .7 Tool sealants immediately with appropriately shaped tool to force sealants against joint backing and joint substrates, eliminating voids and ensuring full contact
    - .1 Tool exposed joint surface concave using tooling agents approved by sealant manufacturer for application.
  - .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 SUMMARY**

- .1 Section includes the installation of a new louvre to the Commercial Building 'A'.

### **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 501-09, Application Manual for Air Louvers.
- .3 American Society for Testing and Materials International (ASTM)
  - .1 ASTM B 209-10, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
  - .2 ASTM B 221-13, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

### **1.03 SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

### **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.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Aluminum wall grille with insect screen, mill finish, vertical blades, size to suit existing opening.
- .2 Fasteners: same material as fabricated items.

## **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 PREPARATION**

- .1 Clean existing unprotected opening of debris or nests prior to grille installation.

**3.03 INSTALLATION**

- .1 Commercial Building 'A': install grille where indicated, using installation method as recommended by manufacturer.
- .2 Attach insect screen to inside face of louver or vent.

**3.04 CLEANING**

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

**END OF SECTION**

## **1 GENERAL**

### **1.01 ACTION AND INFORMATIONAL SUBMITTALS**

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

### **1.02 CLOSEOUT SUBMITTALS**

- .1 Closeout Submittals: in accordance with Section 01 78 00 - Closeout Submittals.
  - .1 Warranty:
    - .1 Provide manufacturers' standard warranty.
    - .2 Warranty is in addition to, and not a limitation of other rights the Owner may have under Contract Documents.
  - .2 Operating & Maintenance Manuals:
    - .1 Submit product data for incorporation into manual and include following:
      - .1 Manufacturer's product number, product name, type and use.

### **1.03 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 PRODUCTS**

### **2.01 DOCK SEALS**

- .1 Provide four (4) sets of removable dock seals, three (3) seals per dock leveler (both sides and hinge) with wall mounted storage brackets.
  - .1 Material: steel with reinforced neoprene rubber fill fabric gasket.
  - .2 Width: 100mm wide.
  - .3 Length: to suit existing dock leveler size.
  - .4 Acceptable product:
    - .1 Xcluder Night Guard by Global Material Technologies.

## **3 EXECUTION**

### **3.01 INSTALLATION**

- .1 Install loading dock seals in accordance with manufacturer's instructions.

### **3.02 CLEANING**

- .1 Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**END OF SECTION**