

ARCHITECTURAL SPECIFICATIONS



PWGSC – Public Works and Government Services Canada
Window Replacement of Cellular Blocks and Common Rooms
Correctional Service Canada
Port-Cartier Institution
1, chemin de l'Aéroport, Port-Cartier
R.088138.001

Issued for bid
April 23th, 2018

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BISSONFORTIN
ARCHITECTURE + DESIGN

ARCHITECTURAL SPECIFICATIONS
Issued for bid, April 23th, 2018.

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Architectural specifications, Issued for bid, April 23th, 2018 prepared by BISSON FORTIN ARCHITECTURE + DESIGN.

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PART 1 – GENERAL

1.1 WORK BY OTHERS

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from the Departmental Representative.
- .2 Co-ordinate work with that of other Contractors. If any part of work under this Contract depends for its proper execution or result upon work of another Contractor, report promptly to the Departmental Representative, in writing, any defects which may interfere with proper execution of Work.

1.2 FUTURE WORK

- .1 Insure that Work avoids encroachment into areas required for future work.

1.3 WORK SEQUENCE

- .1 Construct Work in stages to accommodate the Departmental Representative's use of premises during construction.
- .2 Co-ordinate Progress Schedule and co-ordinate with the Departmental Representative Occupancy during construction.
- .3 Required stages:
 - .1 The work will be undertaken only after all of materials is delivered to the site in containers and inspected.
 - .2 The work will be carried out in one (1) wing / one (1) level at a time.
 - .3 The windows (FB-2, FB-8, FB-15, FB-16, FB-20) of the common spaces of Blocks E, H and L, should not be replaced at the same time as those (FL-3) of the detention wings F, G, J, K, M and N.
 - .4 The windows removed at the beginning of a work shift must be replaced and secure at the end of a work shift.
 - .5 The contractor shall present the planning and distribution of work, for approval.
- .4 Maintain fire access/control.

1.4 CONTRACTOR USE OF PREMISES

- .1 Unrestricted use of site until Substantial Performance.
 - .2 Limit use of premises for Work, storage, and access, to allow:
 - .1 The Owner occupancy.
 - .2 Work by other contractors.
 - .3 Co-ordinate use of premises under direction of Departmental Representative.
 - .4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
 - .5 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
 - .6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Departmental Representative.
 - .7 At completion of operations condition of existing work: equal to or better than that which existed before new work started.
-

1.5 OCCUPANCY BY THE DEPARTMENTAL REPRESENTATIVE

- .1 The Owner will occupy premises during entire construction period for execution of normal operations.
- .2 Co-operate with the Departmental Representative and the Owner in scheduling operations to minimize conflict and to facilitate the Departmental Representative usage.

1.6 PARTIAL OCCUPANCY BY THE DEPARTMENTAL REPRESENTATIVE

- .1 Schedule and substantially complete designated portions of Work for the Owner's occupancy prior to Substantial Performance of entire Work.
- .2 The Owner will occupy designated areas for the purpose of storage of furnishings and equipment and installation of equipment.
- .3 Execute Certificate of Substantial Performance for each designated portion of Work prior to the occupancy by the Owner. Contractor shall allow:
 - .1 Access for the Owner personnel.
 - .2 Use of parking facilities.
 - .3 Operation of HVAC and electrical systems.
- .4 When present on the premises and for those areas of occupancy, the Owner will provide:
 - .1 Operation of HVAC and electrical systems.
 - .2 Maintenance.
 - .3 Security.
- .5 Execute Partial Interim Certificate of Completion for each designated portion of Work prior to the Owner occupancy. Contractor shall allow:
 - .1 Access for the Owner personnel.
 - .2 Use of parking facilities.
 - .3 Operation of HVAC and electrical systems.

1.7 PRE-ORDERED PRODUCTS and PRE-BID WORK

- .1 Not Used.

1.8 PRE-PURCHASED EQUIPMENT

- .1 Not Used.

1.9 ITEMS SUPPLIED BY THE DEPARTMENTAL REPRESENTATIVE

- .1 Departmental Representative Responsibilities:
 - .1 Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to Contractor.
 - .2 Deliver supplier's bill of materials to Contractor.
 - .3 Arrange and pay for delivery to site in accordance with Progress Schedule.
 - .4 Inspect deliveries jointly with Contractor.
 - .5 Submit claims for transportation damage.
 - .6 Arrange for replacement of damaged, defective or missing items.
 - .7 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties and bonds to Contractor.

- .2 Contractor Responsibilities:
 - .1 Designate submittals and delivery date for each product in progress schedule.
 - .2 Review shop drawings, product data, samples, and other submittals. Submit to Departmental Representative notification of observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - .3 Receive and unload products at site.
 - .4 Inspect deliveries jointly with the Departmental Representative; record shortages, and damaged or defective items.
 - .5 Handle products at site, including unpacking and storage.
 - .6 Protect products from damage, and from exposure to elements.
 - .7 Assemble, install, connect, adjust, and finish products.
 - .8 Provide installation inspections required by public authorities.
 - .9 Repair or replace items damaged by Contractor or subcontractor on site (under his control).
- .3 List of the Departmental Representative furnished items:
 - .1 Not Used.

1.10 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations occupants and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.
- .2 Use only equipment approved by Department Representative for moving workers and material.
 - .1 Protect walls of passenger elevators, to approval of Departmental Representative prior to use.
 - .2 Accept liability for damage, safety of equipment and overloading of existing equipment.

1.11 EXISTING UTILITY SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
 - .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian, vehicular traffic and tenant operations.
 - .3 Provide alternative routes for personnel, pedestrian and vehicular traffic.
 - .4 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
 - .5 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
 - .6 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems.
 - .7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
 - .8 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
 - .9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
-

- .10 Record locations of maintained, re-routed and abandoned service lines.
- .11 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.12 REQUIRED DOCUMENTS

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

PART 2 – PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 – EXECUTION

3.1 NOT USED

- .1 Not used.

END OF SECTION

PART 1 – GENERAL

1.1 ACCESS AND EGRESS

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

1.2 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Departmental Representative will not assign sanitary facilities for use by Contractor's personnel.
- .5 Use only existing stairs in building, nacelles or scaffolding or ladders for moving workers and material.
 - .1 Protect all facilities against any damage, provide adequate security methods and avoid subjecting installations to overloads.
- .6 Protect works by temporary elements until all permanent closures are installed.

1.3 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

1.4 EXISTING SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
- .3 Provide for personnel pedestrian and vehicular traffic.

1.5 SPECIAL REQUIREMENTS

- .1 All window replacement work is to be executed from the outside.
 - .2 All window dismantling work is to be executed two windows at a time under a weather resistant shelter covering the scaffolding. The ambient conditions of the shelter must be >12°C.
 - .3 Ensure that no patching is to be done on the inside (of the cell) except for breaks or damages caused by this work.
 - .4 Sand exposed surfaces of bars after existing windows are removed and paint with anti-rust paint.
 - .5 Execute the sealing and install self-adhesive tape to receive new windows.
-

- .6 Seal exterior joints and caulk against the concrete panels.
- .7 If the Contractor should require to reach the window from the inside of the cell, coordinate with governing authority on site. Cells will remain empty during Work.
- .8 Carry out noise generating work from Monday to Friday, during regular working hours. Refer to section 01 35 13 for more precision regarding the daily Work hours.
- .9 Submit the Work schedule in accordance to the Critical Path Method.
- .10 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .11 Keep within limits of work and avenues of ingress and egress.
- .12 Ingress and egress of Contractor vehicles at site is limited to regular working hours.
- .13 Deliver materials during normal working hours, unless otherwise approved by Departmental Representative.

1.6 SECURITY CLEARENCES

- .1 Personnel employed on this project will be subject to security check. Obtain clearance, as instructed, in Section 01 35 13 – Security Requirements, for each individual required to enter premises.
- .2 Personnel will be checked daily at start of work shift, as instructed in Section 01 35 13 – Security Requirements, and provided with a pass which must be worn at all times. Pass must be returned at end of work shift and personnel check-out.

1.7 SECURITY ESCORT

- .1 Construction activities, personnel and vehicles movements will be inspected and monitored by SCC personnel in order to ensure that security standards are completely respected, in accordance with section 01 35 13 – Security Requirements.

1.8 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not permitted in the building.

PART 2 – PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 – EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Not Used.

1.2 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): 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 a commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar Chart (GANTT) submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

1.3 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .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, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
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- .2 On the Bar Chart schedule, specify deadlines for verification and approval of the schedule and for deadline of the work within 5 working days of Award of Contract.
- .3 Specify dates when documents and samples approved by the Departmental Representative must be provided within 5 working days of the Master Plan approval.

1.5 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule.
- .2 The Contractor's schedule shall identify targeted dates for the following milestones:
 - .1 Shop drawing dates.
 - .2 Date for delivery of equipment and material.
 - .3 Date of Work per stage.
 - .4 Substantial Completion date for each of the construction stages.

1.6 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organization and execution of Work as a Bar Chart (GANTT).
- .2 Within 5 working days of Award of Contract, submit a Bar Chart (GANTT) Chart to Departmental Representative, which will serve as a Master Plan for project planning, monitoring and progress reporting.
- .3 Departmental Representative will review and return revised schedules within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.7 PROJECT SCHEDULE

- .1 Develop a detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award of contract.
 - .2 Shop Drawings, Samples.
 - .3 Permits.
 - .4 Mobilization.
 - .5 Demolition.
 - .6 Window replacement per sector.
 - .7 Delivery dates for Departmental Representative supplied equipment.

1.8 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule once a month, reflecting activity changes and completions, as well as activities in progress. The updated schedule shall be submitted along with every monthly progress payment.
 - .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.
 - .3 Submit upcoming work plan three (3) weeks ahead of time.
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PART 2 – PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 – EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 REFERENCES

- .1 National building code 2015 edition and CSST rules.

1.2 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 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
 - .2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec Canada.
 - .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
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- .4 Without restricting the general scope of prior notes, it is important to notify that the contractor is responsible for accuracy of all dimensions, providing information for execution methods or construction techniques, installation and coordination of works by all trades.
 - .5 Allow 5 days for Departmental Representative's review of each submission.
 - .6 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
 - .7 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
 - .8 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.
 - .9 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
 - .10 After Departmental Representative's review, distribute copies.
 - .11 Submit one electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
 - .12 Submit (1) electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .13 Submit (1) electronic copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within (3) years of date of contract award for project.
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- .14 Submit (1) electronic copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
- .15 Submit (1) electronic copy of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .16 Submit (1) electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .18 Submit (1) electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .19 Delete information not applicable to project.
- .20 Supplement standard information to provide details applicable to project.
- .21 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.4 SAMPLES

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

1.5 MOCK-UPS

- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control.

1.6 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg fine resolution monthly with progress statement and as directed by Departmental Representative.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: (3) locations.
 - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: and weekly as directed by [Departmental Representative]
 - .1 Upon completion of: framing and services before concealment, of Work and as directed by Departmental Representative.

1.7 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit required and pertinent documents by la commission de la santé et de la sécurité au travail (CSST).

PART 2 – PRODUCTS

2.1 SAMPLES USED IN EACH OF PRESENT SPECIFICATION

- .1 Provide samples in their standard dimensions (as provided by commercial representative of manufacturer) or required erected /constructed samples by departmental representative of all parts of work.

PART 3 – EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 CROSS REFERENCES

- .1 The security requirements in this section refer to CSC Standard Operating Practices. In the event of a conflict with this document, CSC standard operating practices take precedence.
- .2 Authority: Corrections and Conditional Release Regulations.

1.2 OBJECTIVE

- .1 To specify the regulations to be followed by outside contractors and workers performing work at the institution and to set out the special security measures that apply to construction, renovation, maintenance and repair work.

1.3 DEFINITIONS

- .1 **"Industrial vehicle"** means any motor vehicle used to deliver material, equipment and tools required in construction, renovation, maintenance and repair work.
- .2 **"Contraband"** means:
 - .1 An intoxicant.
 - .2 A weapon or a component thereof, ammunition for a weapon, and anything that is designed to kill, injure or disable a person or that is altered so as to be capable of killing, injuring or disabling a person, when possessed without prior authorization.
 - .3 An explosive or a bomb or a component thereof.
 - .4 Any other item that could jeopardize the security of a penitentiary or the safety of persons, when that item is possessed without prior authorization.
- .3 **"Penitentiary"** means a facility of any description, including all lands connected therewith that is operated, permanently or temporarily, by the Service for the care and custody of inmates.
- .4 **"Intoxicant"** means a substance that, if taken into the body, has the potential to impair or alter judgment, behavior or the capacity to recognize reality or meet the ordinary demands of life, but does not include caffeine, nicotine or any authorized medication used in accordance with directions given by a staff member or a registered health care professional.
- .5 **"Visitor"** means any person other than an inmate or a CSC staff member.

1.4 ROLES AND RESPONSIBILITIES

- .1 The working hours shall be approved by the Institutional Head. The Institutional Head has the right to modify these working hours for security concerns or reasons of an exceptional nature, if need be.
 - .2 The Associate Warden is responsible for issuing instructions concerning the regulations and security measures applicable to outside contractors and workers. Performance of the work must not interfere with the operation of the institution or jeopardize its security.
 - .3 The Associate Warden shall ensure that the Contractor and its employees are granted all reasonable freedom of action to perform the work diligently and efficiently.
 - .4 The Coordinator, Correctional Operations is responsible for the application of these directives and for updating this standard operating practice with the help of the section chiefs concerned.
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- .5 The Coordinator, Correctional Operations is responsible for informing the Contractor of the security requirements set out in this standard operating practice.
- .6 The Coordinator, Correctional Operations shall participate in site meetings in order to obtain all the information required to control and supervise the contract properly. At these meetings, he shall ensure that the information concerning the contract or contained in this standard operating practice is transmitted to the persons concerned. During the briefing, the institution staff shall be informed that a construction project is to take place. More specifically, relevant and accurate information shall be transmitted to the staff responsible for security and the staff responsible for inmates.
- .7 Any supervisor or staff member responsible for workers or activities involving contractors is also responsible, in their area of jurisdiction, for admitting and controlling persons entering the institution to work in their section.
- .8 As soon as the Contractor has been notified that the proposal has been accepted, the contracting authority shall make the necessary arrangements for a meeting between representatives of the institution where the work is to be done and the Contractor in order to exchange this information.
- .9 At this meeting, the Contractor shall appoint its official on-site representative, who shall be responsible for identifying, to the satisfaction of the institution employees, all persons entering the reserve to perform the contract.
- .10 The Contractor shall inform all its staff of the security standards and ensure that a copy of these standards is prominently and permanently displayed on the site.
- .11 During the Bid phase, the Contractor shall visit the site to take note of the scope and complexity of the work to be performed and to check the existing conditions at the site.
- .12 The Contractors must be vigilant as to their employees and the employees of their subcontractors, since the discovery of contraband may result in the security clearance cancellation of the employee involved. A serious offence can lead to the expulsion from the site of the establishment for the duration of the construction project.

1.5 CONTROLLING CONTRABAND

The Contractor shall ensure that everyone who works for it directly or indirectly on the site is familiar with the definition of contraband set out in paragraph 4 of this standard operating practice and also with sections 45, 59, 60 and 61 of the Corrections and Conditional Release Act, which state:

SUMMARY CONVICTION OFFENCES

SECTION 45:

Every person commits a summary conviction offence who:

- .1 is in possession of contraband beyond the visitor control point in a penitentiary;
- .2 is in possession of anything referred to in paragraph (b) or (c) of the definition "contraband" before the visitor control point at a penitentiary;
- .3 delivers contraband to, or receives contraband from, an inmate;
- .4 without prior authorization, delivers jewellery to, or receives jewellery from, an inmate;
 - a. Or trespasses at a penitentiary.

SEARCHES FOR VISITORS

SECTION 59:

A staff member may conduct routine non-intrusive searches or routine frisk searches of visitors, without individualized suspicion, in the prescribed circumstances, which circumstances must be limited to what is reasonably required for security purposes.

SECTION 60:

- .1 A staff member may conduct a frisk search of a visitor where the staff member suspects on reasonable grounds that the visitor is carrying contraband or carrying other evidence relating to an offence under section 45.
- .2 A staff member of the same sex as the visitor may, after giving the visitor the option of voluntarily leaving the penitentiary forthwith, conduct a strip search of the visitor:
 - a. suspects on reasonable grounds that a visitor is carrying contraband or carrying other evidence relating to an offence under section 45 and believes that a strip search is necessary to find the contraband or evidence, and
 - b. satisfies the institutional head that there are reasonable grounds to believe that a strip search is necessary to find the contraband or evidence.
- .3 Where a staff member believes on reasonable grounds that a visitor is carrying contraband or carrying other evidence relating to an offence under section 45 and that a strip search is necessary to find the contraband or evidence:
 - a. the staff member may detain the visitor in order to obtain the authorization of the institutional head to conduct a strip search, or obtain the services of the police;
 - b. and that a strip search is necessary to find contraband or evidence, the institutional head may authorize a staff member of the same sex as the visitor to conduct a strip search of the visitor.
- .4 A visitor who is detained pursuant to subsection (3) shall be informed promptly of the reasons for the detention; and before being searched, be given a reasonable opportunity to retain and instruct counsel without delay and be informed of that right.

SEARCHES FOR VEHICLES

SECTION 61:

- .1 A staff member may, in the prescribed manner, conduct routine searches of vehicles at a penitentiary, without individualized suspicion, in the prescribed circumstances, which circumstances must be limited to what is reasonably required for security purposes.
 - .2 A staff member who believes on reasonable grounds that contraband is located in a vehicle at a penitentiary in circumstances constituting an offence under section 45 may, with prior authorization from the institutional head, search the vehicle.
 - .3 Where a staff member believes on reasonable grounds that the delay that would be necessary in order to comply with the prior authorization requirement of subsection (2) would result in danger to human life or safety or the loss or destruction of the contraband, the staff member may search the vehicle without that prior authorization.
 - .4 It is forbidden to consume or keep alcoholic drinks and narcotics on institution property. If discovered on the site, they must be reported immediately to the institution Associate Warden, who will identify the guilty person or persons. Furthermore, any person working on the project who appears to be inebriated or under the influence of drugs or narcotics or whose behaviour seems abnormal may be required to leave the institution's premises.
 - .5 No weapons may be brought onto the institution reserve.
 - .6 It is forbidden to take photographs on the reserve at any time without prior authorization. The Institution Warden concerned may permit the taking of one or two photos under certain conditions, if deemed justifiable.
 - .7 Ropes and flammable materials shall be stored in a locked place (guard post) and out of the inmates' reach at all times. When these items are required, they must be used under the constant supervision of a responsible person.
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- .8 Ladders and scaffolding must be stored in the place indicated by the institution Coordinator, Correctional Operations at the beginning of the contract.

1.6 ACCESS TO INSTITUTION

- .1 When moving about the CSC property unaccompanied by an agent designated either by the Installations Manager or the Manager, Correctional Operations, a correctional agent may request that Contractors, their employees and their agents identify themselves at the different check points (e.g. motor patrols, the main entry, etc.). The presence of their vehicle may also be recorded.
- .2 The Installations Manager and / or the Manager, Correctional Operations must pre-approve all movement of a contractor's employee or agent beyond the limits of the Work site defined below. This employee or agent shall be escorted and could be searched or subjected to a tool check. This person and the objects transported by him will be verified by a metal detector and an XRay scanner. Other techniques may be used for drug detection. In certain exceptional circumstances, a pat-down or strip search may be requested by the Institution Director. Authorized persons shall report to the postern as requested by the Coordinator, Correctional Operations. Postern personnel will communicate appropriate instructions.
- .3 In the context of the current project, as defined in the call in for submission, an existing entry (service entry) formed by two barriers permitting the crossing of two fences forming the security perimeter can be used by the Contractor for access to the construction site. The CSC will post an officer who shall be responsible for the identification and supervision of persons and vehicles entering and exiting construction site. These barriers grant access into a zone situated on the interior of the security perimeter and enclosed by existing fences. These fences, the two comprising the security perimeter and the exterior wall of the existing building determine the limit of the construction zone applicable to the current project.
- .4 All vehicles entering or exiting the interior of the Institution grounds shall be subjected to a search. These searches apply to the driver and to the contents of the vehicle.
- .5 Anyone refusing the mandatory search will be denied entry to or will be escorted from the Institution grounds comprising the construction site.
- .6 Anything abnormal shall be reported to the Supervisor, Correctional Operations at the operational office, who will transmit the information to the unit manager.
- .7 The Associated Warden of the Institution reserves the right to refuse the authorization of access to the CSC property. The right to refusal shall be enacted when the Warden has been notified that the presence of one or several individuals within the limits of the CSC property poses a security risk to the Institution.
- .8 Under certain exceptional circumstances or given certain activities underway in the concerned sector, for security reasons, the Associate Warden, during the day watch, and the Agent in charge of the Institution during the evening and night watches, reserve the right to refuse entry of the Contractor or his employees to certain sectors of the Institution.

1.7 HIRING RESTRICTIONS

- .1 It is forbidden for contractors working on the institution reserve to hire former inmates for these projects without prior authorization.
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1.8 PARKING (AND RESTRICTIONS CONCERNING VEHICLES)

- .1 The institution Coordinator, Correctional Operations determines where construction employees may park. The Contractor's employees must park their private vehicles in the visitors' parking lot located in front of the Institution.
- .2 The windows of all parked vehicles must be closed, the doors and trunks locked, and all keys removed from the vehicles. The CSC authorities reserve the right to inspect these vehicles at any time.
- .3 When entering or leaving the institution, it is forbidden to allow anyone on the access roads to enter a vehicle.
- .4 Trailers and mobile workshops parked on the institution reserve must be locked at all times. The authorities reserve the right to inspect these vehicles at any time.

1.9 SECURITY CHECKS AND IDENTIFICATION CARDS

- .1 The Contractor shall give the institution Coordinator, Correctional Operations a list of all employees working on the site and the information required to do a security check, five (5) days after the contract is awarded or before the work commences if it starts sooner.
 - .2 The Preventive Security Officer is responsible for doing a security check of all the names of the contractors who are to work on institution property.
 - .3 When the check has been done, the names of all contractors that meet the institution's security requirements will appear on the computer list available at the guard post.
 - .4 The Correctional Officer II on duty at the guard post shall check if all the contractors who report to the institution are on the authorized list.
 - .5 Any person whose name is not on the authorized list upon arrival shall remain at the guard post and await a decision made by the Preventive Security Officer who shall be informed immediately of the matter.
 - .6 Any person whose name appears on the list must, upon his first visit, be escorted to office of the Preventive Security Officer to have his photo taken and the issuing of an identification card.
 - .7 If for some reason it is not necessary to issue a contractor with an identification card (for example, the work will take less than a normal day's work), the Preventive Security Officer shall inform the Correctional Officer II at the guard post in writing, also indicating how long the work will take.
 - .8 A copy of each issued identification card is posted at all times at the main entry or at the service entry if need be, except in certain specific cases where the security
 - .9 The Coordinator, Correctional Operations is responsible for issuing and controlling identification cards for contractors and their employees. The Preventive Security Officer shall keep a register containing the following information: issue date, name of the visitor and the company he represents, date the card is cancelled and destroyed, other details such as lost, replaced and date, construction project number (if applicable).
 - .10 The Coordinator, Correctional Operations may require close-up photographs to be taken of contract workers and to be posted in appropriate places in the institution for identification purposes.
 - .11 The institution is responsible for taking the photographs. The printed label used for staff cards is affixed to the back of the card. The Preventive Security Officer provides the relevant information, as well as issue authorization.
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- .12 When the activity is finished and an employee of the Contractor is not expected to return to the institution, the division chief responsible shall inform the Preventive Security Officer so that the latter can withdraw and cancel the identification card and make the appropriate annotations in the register.
- .13 When in the institution, the Contractor and its employees shall show their official identification cards visibly, pinned at chest height. Identification cards are the property of the Correctional Service of Canada and must never leave the institution. They are used for personal verification, are given daily to the workers when they arrive and collected when they leave.
- .14 The holder of an identification card shall report its loss or deterioration without delay to the authority responsible for issuing it.

1.10 CONTROLLING OBJECTS THAT COULD COMPROMISE INSTITUTIONAL SECURITY

- .1 The Contractor shall give a detailed list of its tools and equipment to the Coordinator, Correctional Operations, who is responsible for controlling and updating it. In addition, a copy of this list must be displayed at all times inside the tool box used for this purpose. The officer responsible for searches uses this list to check the tools each time the Contractor enters or leaves the institution or when deemed necessary. Any departure from this procedure must be authorized by the Coordinator, Correctional Operations.
- .2 When tools are left on site, these checks must be done:
 - .1 At the beginning and end of each project;
 - .2 Each week if the work lasts longer than a week.
- .3 All tools and equipment must be kept under constant surveillance and not left lying around. Special attention must be paid to files, saw blades, steel wires, ropes and ladders.
- .4 All tools and equipment must be stored in the designated locations and as recommended by the institution authorities.
- .5 All toolboxes must be locked when not in use. Any lost tools or equipment must be reported immediately to the Supervisor, Correctional Operations at the operational office.

1.11 CONTROLLING THE RELEASE AND RETURN OF KEYS

- .1 If due to the nature and duration of the work it is necessary to give keys to the Contractor, as soon as the Security Maintenance Officer gives him the keys, the Contractor shall:
 - .1 Give a receipt to the Security Maintenance Officer including a list of all the keys and the number of each key by code;
 - .2 Give a copy of this receipt to the Correctional Officer assigned to site supervision;
 - .3 Procure and install a lockable metal cabinet with enough hooks to hang each key on a separate hook;
 - .4 Appoint one of its employees to be responsible for controlling the release and return of keys during the work;
 - .5 If necessary, issue instructions to its employees and subcontractors to ensure the safekeeping of the set of operating keys.
- .2 The Contractor shall be informed that when using the operating keys, he must:
 - .1 instruct his employees that all keys are be returned to the key control person at the end of each day's work or as soon as they are no longer required to do the day's work.
 - .2 set up a system to record when all keys are released and returned, indicating:
 - a. date and time a key is taken;
 - b. relevant code;
 - c. recipient's name;
 - d. employer's name;

- e. date and time the key is returned and signature of the key control officer, each time a key is returned to him;
- f. signature of the Service officer assigned to the site certifying that all the keys have been returned to the key control officer at the end of each day.
- .3 Any key that is lost, damaged, misused or handled carelessly must be reported in writing to the Security Maintenance Officer and identified by its code. The Service officer assigned to the site must receive a copy of this report.
- .4 Upon receipt of this report, the Coordinator, Correctional Operations must take the appropriate steps to replace or cancel the code in question, as circumstances warrant.

1.12 BEHAVIOUR TOWARDS INMATES

- .1 All contractors and workers must:
 - .1 Avoid allowing inmates to involve them in their personal lives or the associated problems;
 - .2 Limit their activities to the authorised program;
 - .3 Follow the instructions of the liaison officer (escort).
 - .4 Refuse to pass an object or written or verbal message from an inmate to anyone outside the institution.
 - .5 Avoid giving their name and telephone number to an inmate.
 - .6 When there is an incident, all contractors and workers must stop all activities when requested by a Correctional Officer and follow the latter's instructions.
- .2 Persons who do not comply with the regulations will be denied access to the institution reserve or be ordered to leave immediately without further notice.

1.13 USE OF THE PREMISES

- .1 Contractors and workers shall use only the minimum space allowed or necessary to perform the work and to store the materials and equipment.
- .2 The Contractor shall reach an agreement with the Institution's Assistant Warden, Management Services and the CSC project leader concerning the limits of the space provided.

1.14 ACCESS AND ESCORT

- .1 The Contractor and his employees shall always report to the Institution with an official identification card with photo (e.g. a driver's license).
- .2 The Contractor and his employees shall be escorted at all times by a corrections officer or agent, when they must work in the presence of or near to inmates.

1.15 DELIVERIES AND ACCESS TO THE SITE

- .1 The Contractor must:
 - .1 have all material and equipment for the project delivered to his name in order to avoid any confusion with deliveries for the institution itself. Each label shall indicate the title of the contract, the Contractor's name and identification of the building where the material is to be delivered;
 - .2 check with the institution Coordinator, Correctional Operations the times at which vehicles are allowed to enter and leave. Vehicles and employees are not allowed to arrive after normal working hours or at the weekend, unless agreed in advance with the Coordinator, Correctional Operations;
 - .3 if overtime work is necessary, the Contractor shall inform the Coordinator, Correctional Operations, who obtains the Associate Warden's authorization at least 24 hours in advance so that standby personnel can be assigned to observe and inspect the activities related to the work.

- .4 No private vehicles are allowed within the security fences, unless special permission has been given by the Coordinator, Correctional Operations. Trucks delivering material, equipment and tools are only allowed onto the site when the contents are considered necessary to perform the work.

1.16 MAINTAINING SERVICES AND CLEAN-UP

- .1 The Contractor shall:
 - .1 agree at least forty-eight (48) hours in advance with the Assistant Warden, Management Services concerning any interruption in existing services: water, electricity, heating, etc., and to keep the duration of the interruption to a minimum. The Assistant Warden, Management Services shall pass this information on to those concerned.
 - .2 Take all necessary measures so that the interruption of services is reduced to the strict minimum.
- .2 The Contractor shall:
 - .1 Each day all debris and waste must be removed from the site and the site inspected to ensure that no tools or objects are forgotten on the work site.
 - .2 When the work is finished, the site must be cleaned up properly in preparation for its intended use.

1.17 WORK HOURS

- .1 Unless indicated otherwise, contracted work must be executed between 7:00 am and 5:00 pm only weekdays and never on holidays. A count of detainees is taken each day at 4:30 pm. The contractor's employees and agents will not be authorized to leave the premises until the count has been completed.
- .2 For security reasons, the Work must only be executed when the inmates are no longer in their cell blocks. This Work shall be conducted during the following hours: between 9:30 am and 3:30 pm. The calendar of this Work must therefore be co-ordinated with the Coordinator, Correctional Operations. This Work includes:
 - .1 Tous les travaux de remplacement des fenêtres de cellules des ailes F-G-K-J -M-N et des salles communes qui y sont associées, ainsi que tous les travaux connexes s'y rattachant.

END OF SECTION

PART 1 – GENERAL

1.1 DIRECTIVE

- .1 The location of the caravan site will be determined at the first site meeting.
- .2 Employees and agents of the contractor are not allowed to use the facilities of the Correctional Service of Canada (CSC) for meals. They will take their meals on site or outside of the CSC property.
- .3 Employees and agents of the contractor are not allowed to use the sanitary facilities of CSC. The Contractor shall provide a toilet construction.
- .4 Scaffolds will be dismantled and stored daily. The impact tools using cartridges are not accepted. However, the pneumatic percussion tools are allowed.
- .5 The Contractor may use the following services:
 - .1 Electricity: 110, 220 and 550 volts. All necessary connections should however be made by the contractor at his expense;
 - .2 Water and Storage: Details to be finalized during the visit of the bidders;
 - .3 Telephone: Contractor, its employees and agents shall not use a phone that the contractor will install at its own expense in his caravan site.
 - .4 Cell: banned for all.
- .6 For details on operations, the Contractor shall contact the Chief, Construction and Maintenance Services Institution, details of which will be transmitted following the contract award.
- .7 A security guard (commission) will be hired and paid by the institution that he attended the Institution staff in monitoring activities related to construction.
- .8 For operations chief, contact Mr. Robert Lepage, at (418 285-2455, # 2240.)

END OF SECTION

PART 1 – GENERAL

1.1 GENERAL

- .1 Contractor shall manage his operations so that safety and security of the public and of site workers always take precedence over cost and scheduling considerations.

1.2 REFERENCES

- .1 Canada Labour Code - Part II, Canadian Occupational Safety and Health Regulations.
- .2 Canadian Standards Association (CSA)
- .3 Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material safety data sheet (MSDS).
- .4 Act Respecting Occupational Health and Safety, R.S.Q. Chapter S-2.1.
- .5 Construction Safety Code, S-2.1, r.6.

1.3 SUBMITTALS

- .1 Submit the documents required according to section 01 13 30- Documents and samples to be submitted.
 - .2 Submit to Departmental Representative, the CNESST the site-specific safety program, as outlined in 1.8 at least 10 days prior to start of work. The Contractor must review his program during the course of the project if any change occurs in work methods or site conditions. The Departmental Representative may, after receiving the program or at any time during the project, ask the Contractor to update or modify the program in order to better reflect the reality of the construction site and activities. The Contractor must make the required changes before work begins.
 - .3 Submit to Departmental Representative the site inspection sheet, duly completed, at the intervals indicated in 1.13.1.
 - .4 Submit to Departmental Representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by federal or provincial inspectors.
 - .5 Submit to Departmental Representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.
 - .6 Submit to Departmental Representative all safety data sheets for hazardous material to be used at the site at least three days before they are to be used.
 - .7 Submit to Departmental Representative copies of all training certificates required for application of the safety program, in particular:
 - .1 General construction site safety and health courses;
 - .2 Safety officer attestations;
 - .3 First aid in the workplace and cardiopulmonary resuscitation;
 - .4 Work likely to release asbestos dust;
 - .5 Work in confined spaces;
 - .6 Lockout procedures;
 - .7 Wearing and fitting of individual protective gear;
 - .8 forklift truck;
 - .9 positioning platform;
 - .10 Any other requirement of Regulations or the safety program.
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- .8 Medical examinations: Wherever legislation, regulations, directives, specification or a safety program require medical examinations, Contractor must:
 - .1 Prior to start-up, submit to Departmental Representative certificates of medical examination for all concerned supervisory staff and employees who will be on duty when the site opens.
 - .2 Thereafter, submit without delay certificates of medical examination for any newly hired concerned personnel as and when they start work at the site.
- .9 Emergency plan: The emergency plan, as defined in 1.8.3, shall be submitted to Departmental Representative at the same time as the site-specific safety program.
- .10 Notice of site opening: Notice of site opening shall be submitted to the Commission *de la santé et de la sécurité du travail* before work begins. A copy of such notice shall be submitted to Departmental Representative at the same time and another posted in full view at the site. During demobilization, a notice of site closing shall be submitted to the CNESST, with copy to Departmental Representative.
- .11 Plans and certificates of compliance : Submit to the CNESST and to Departmental Representative a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the Construction Safety Code (S-2.1, r. 6), or by any other legislation or regulation or by any other clause in the specifications or in this contract. Copies of these documents must be on hand at the site at all times.
- .12 Certificate of compliance delivered by the CNESST: The certificate of compliance is a document delivered by the CNESST confirming that the contractor is in rule with the CNESST, i.e. that he had pay out all the benefits concerning this contract. This document must be delivered to Departmental Representative at the end of the work.

1.4 HAZARDS ASSESSMENT

- .1 The contractor must identify all hazards inherent in each task to be carried out at the site.
- .2 The contractor must plan and organize work so as to eliminate hazards at source or promote mutual protection so that reliance on individual protective gear can be kept to a minimum. Where individual protection against falling is required, workers shall use safety harness that meets standard Can - CSA- Z-259.10 - M90. Safety belts shall not be used as protection against falling.
- .3 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.
- .4 All mechanical equipment shall be inspected before delivery to the site. Before using any mechanical equipment, submit to Departmental Representative a certificate of compliance signed by a qualified mechanic. Whenever he suspects a defect or accident risk, Departmental Representative may at any time order the immediate shut-down of equipment and require a new inspection by a specialist of his own choosing.

1.5 MEETINGS

- .1 Contractor decisional representative must attend any meetings at which site safety and health issues are to be discussed
 - .2 Set up a site safety committee, and convene meetings every in accordance with the Construction Safety Code (S-2.1, r.6).
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1.6 LEGAL AND REGULATORY REQUIREMENTS

- .1 Comply with all legislation, regulations and standards applicable to the site and its related activities.
- .2 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
- .3 Regardless of the publication date shown in the construction safety code, always use the most recent version.

1.7 SITE-SPECIFIC CONDITIONS

- .1 At the site, the contractor must take account of the following specific conditions:
 - .1 Some Work will be done under the watch of the governing authorities on the premises.
 - .2 Additional security measures will be applicable.

1.8 SAFETY AND HEALTH MANAGEMENT

- .1 Acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the Act Respecting Occupational Health and Safety (R.S.Q., chapter S-2.1) and the Construction Safety Code (S-2.1, r.6).
 - .2 Develop a site-specific safety program based on the hazards identified and apply it from the start of project work until close-out is completed. The safety program must take account of all information appearing in 1.7 and must be submitted to all parties concerned, in accordance with the provisions set forth in 1.3. At a minimum, the site-specific safety program must include:
 - .1 Company safety and health policy.
 - .2 A description of the work, total costs, schedule and projected workforce curve.
 - .3 Flow chart of safety and health responsibility.
 - .4 The physical and material layout of the site.
 - .5 First-aid and first-line treatment standards.
 - .6 Identification of site-specific hazards.
 - .7 Risk assessment for the tasks to be carried out, including preventive measures and the procedures for applying them.
 - .8 Training requirements.
 - .9 Procedures in case of accident/injury
 - .10 Written commitment from all parties to comply with the prevention program.
 - .11 A site inspection schedule based on the preventive measures.
 - .3 The contractor must draw up an effective emergency plan based on the characteristics and constraints of the site and its surroundings. Submit the emergency plan to all parties concerned, pursuant to the provisions of 1.3. The emergency plan must include:
 - .1 Evacuation procedure.
 - .2 Identification of resources (police, firefighters, ambulance services, etc.).
 - .3 Identification of persons in charge at the site.
 - .4 Identification of those with first-aid training.
 - .5 Training required for those responsible for applying the plan.
 - .6 Any other information needed, in the light of the site characteristics.
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1.9 RESPONSIBILITIES

- .1 No matter the size of the construction site or how many workers are present at the workplace, designate a competent person to supervise and take responsibility for health and safety. Take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the site and likely to be affected by any of the work.
- .2 Take all necessary measures to ensure application of and compliance with the safety and health requirements of the contract documents, applicable federal and provincial regulations and standards as well as the site-specific safety program, complying without delay with any order or correction notice issued by the Commission de la santé et de la sécurité du travail.
- .3 Take all necessary measures to keep the site clean and in good order throughout the course of the work

1.10 COMMUNICATIONS AND POSTING

- .1 Make all necessary arrangements to ensure effective communication of safety and health information at the site. As they arrive on site, all workers must be informed of their rights and obligations pertaining to the site specific safety program. The Contractor must insist on their right to refuse to perform work which they feel may threaten their own health, safety or physical integrity or that of other persons at the site. The Contractor must keep and update a written record of all information transmitted with signatures of all affected workers.
- .2 The following information and documents must be posted in a location readily accessible to all workers:
 - .1 Notice of site opening.
 - .2 Identification of Principal Contractor.
 - .3 Company OSH policy.
 - .4 Site-specific safety program.
 - .5 Emergency plan.
 - .6 Data sheets for all hazardous material used at the site.
 - .7 Minutes of site committee meetings.
 - .8 Names of site committee representatives.
 - .9 Names of those with first-aid training.
 - .10 Action reports and correction notices issued by the CNESST.

1.11 UNFORESEEN CIRCUMSTANCES

- .1 Whenever a source of danger not defined in the specifications or identified in the preliminary site inspection arises as a result of or in the course of the work, immediately suspend work, take appropriate temporary measures to protect the workers and the public and notify Departmental Representative, both verbally and in writing. Then the Contractor must modify or update the site specific safety program in order to resume work in safe conditions.

1.12 HEALTH/SAFETY/HYGIENE/ENVIRONMENTAL SPECIALISTS

- .1 As soon as work starts, hire 1 safety officer, pursuant to the provisions of sections 2.5.3 and 2.5.4 of the Construction Safety Code (S-2.1, r. 6) and give him/her/them the necessary authority to carry out the duties of this position, including authority to stop work on safety and health grounds.
 - .2 From the beginning of the Work, hire a qualified person whose duties will be to ensure compliance with and application of all legislation, regulations and standards and all contractual requirements pertaining to health and safety requirements.
 - .3 Provide this person with the authority, resources and tools needed for performance of his/her duties.
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- .4 The person selected shall meet the following requirements:
 - .1 Be qualified by CNESST
 - .2 Be informed about the special and particular conditions applicable in site.
- .5 The person selected shall:
 - .1 Have in-depth knowledge of legislation and regulations applicable to the site pertaining to (specify area of expertise).
 - .2 Develop and disseminate a safety orientation program for all site workers.
 - .3 Ensure that no worker is admitted to the site without having taken the safety orientation program and met all the training requirements of the applicable legislation and the site-specific safety program.
 - .4 Inspect the work and ensure compliance with all regulatory requirements and those of the contract documents or the site-specific safety program.
 - .5 Keep a daily log of actions taken and submitting a copy to Departmental Representative each week.

1.13 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS

- .1 Inspect the work site and complete the site inspection sheet at least once a day.
- .2 Immediately take all necessary measures to correct any lapses from legislative or regulatory requirements and any hazards identified by a government inspector, by the Departmental Representative, by the site safety and health coordinator or during routine inspections.
- .3 Submit to Departmental Representative written confirmation of all measures taken to correct lapses and hazardous situations.
- .4 Give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order interruption and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and site workers and environmental protection take precedence over cost and scheduling considerations.
- .5 Without limiting the scope of sections 1.8 and 1.9, Departmental Representative may order cessation of work if, in his/her view, there is any hazard or threat to the safety or health of site personnel or the public or to the environment.

1.14 BLASTING

- .1 Blasting and other use of explosives are forbidden unless authorized in writing by Departmental Representative.
 - .2 Any operation involving explosives must be carried out under the supervision of a qualified shot firer.
 - .3 The purchase, carriage, storage and use of explosives must comply with all applicable federal and provincial legislation:
 - .1 Canada: Explosives Act (E-17)1, Explosives Regulations (C.R.C. CH. 599), Standard for Storage of Blasting Charges and Detonators, Transportation of Dangerous Goods Act and Regulations.
 - .2 Quebec: Explosives Act (E-22), Explosives Regulations (E-22, r.1), Safety Code for the Construction Industry (S-2.1, r.6), Transportation of Dangerous Goods Regulations.
 - .4 Contractor shall obtain all permits required pursuant to the legislation and regulations referred to above and keep copies on hand at the site.
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- .5 Contractor shall facilitate inspection of the site, stored explosives and vehicles used to transport explosives by any government representatives or police officers whose jurisdiction encompasses explosives.

1.15 POWDER ACTUATED DEVICES

- .1 Use of power hammers and other explosive-actuated devices must be authorized by Departmental Representative.
- .2 Any person using a power hammer shall hold a training certificate and meet all requirements of Section 7 of the Construction Safety Code (S-2.1, r. 6).
- .3 Any other explosive-actuated device shall be used in accordance with the manufacturer's directions and applicable standards and regulations.

1.16 SCAFFOLDING: SPECIAL REQUIREMENTS

In addition to the requirements of the *Safety Code for the construction industry*, the Contractor using scaffolding must respect the following requirements:

Foundation

- .1 Scaffolding shall be installed on a solid foundation so that it does not slip or rock.
- .2 Contractors wishing to install scaffolding on a roof, overhang, canopy or awning shall submit their calculations and loads to the Engineer and shall obtain permission from the Engineer before beginning installation.

Assembly, bracing and mooring

- .1 All scaffolding shall be assembled, braced and moored in accordance with the manufacturer's instructions and the provisions of the *Safety Code for the construction industry*.
- .2 Where a situation requires the removal of part of the scaffolding (e.g., crosspieces), the Contractor shall submit an assembly procedure signed and sealed by an engineer certifying that the scaffolding assembled in that manner will allow the work to be done safely given the loads to which it will be subject.
- .3 For scaffolding where the span between two supports is greater than 3 m, the Contractor shall provide an assembly plan signed and sealed by an engineer.

Protection against falls during assembly

- .1 Workers working above the ground shall be protected against falls at all times during assembly.
- .2 Before the work begins, the Contractor shall submit to the Engineer a procedure stating the protective measures used and, if applicable, identifying the anchor points for the safety cables or moorings. This procedure shall be in accordance with sections 3.9.4.5, 2.9.1 and 2.10.12 of the *Safety Code for the construction industry* (amended on August 2, 2001).

Platforms

- .1 Scaffolding platforms shall be designed and installed in accordance with the provisions of the *Safety Code for the construction industry*.
 - .2 If planks are used, they shall be approved and stamped in accordance with section 3.9.8 of the *Safety Code for the construction industry* (in force January 1, 2002).
 - .3 The platforms shall cover the entire surface protected by the guardrails.
 - .4 The above notwithstanding, scaffolding 4 sections (or 6 metres) high or higher shall have a full platform covering the entire surface of the putlogs every 3 m or fraction thereof, and the components of that platform shall not be moved at any time to create an intermediate landing.
-

Guardrails

- .1 A guardrail shall be installed on every landing.
- .2 Cross braces shall not be considered guardrails.
- .3 Where scaffolding 4 sections (or 6 metres) high or higher requiring full platforms is used, guardrails shall be installed on each landing at the start of work and shall remain in place until the work is completed.

Access

- .1 The Contractor shall ensure that access to the scaffolding does not compromise worker safety.
- .2 Where the platforms of the scaffolding are comprised of planks, ladders shall be installed in such a way that planks extending beyond the platform do not block the way up or down.
- .3 Notwithstanding the provisions of the *Safety Code for the construction industry*, stairs shall be installed on all scaffolding that has 6 or more rows of uprights or is 6 sections (or 9 metres) high or higher.

Protection of the public and occupants

- .1 The Contractor shall identify the boundaries of and barricade the work area so as to limit access to authorized workers only.
- .2 The Contractor shall install covered walkways, nets or other similar devices to protect the public or the occupants against falling objects.

Use of public thoroughfares

- .1 Where it is necessary to encroach on a public thoroughfare, the Contractor shall obtain at the Contractor's expense any authorizations and permits required by the competent authority.
- .2 The Contractor shall install at the Contractor's expense any signage, barricades or other devices needed to ensure the safety and security of the public and the Contractor's own facilities.

1.17 SPECIFIC CONDITIONS FOR ROOFING WORK

PROTECTION AGAINST FALLS FROM GREATER HEIGHT

Guardrails

- .1 Installation of guardrails is mandatory. PWGSC may specify certain restrictions with regard to anchoring, in which case the Contractor must make sure that the guardrails meet all of the requirements in section 3.8 of the *Safety Code for the Construction Industry (L.R.Q., S-2.1, r. 6)*.
- .2 The Contractor agrees not to remove the guardrails until the project is completed. The Engineer will authorize their removal when he is able to attest that all of the work, inspections and corrections required have been carried out.

Harnesses

- .1 Workers installing the guardrails shall wear safety harnesses.
 - .2 Workers installing and modifying guardrails or flashing shall wear safety harnesses in the event guardrails must be moved temporarily.
 - .3 Workers shall wear safety harnesses when receiving material and giving directions to the crane operator next to a drop.
 - .4 Safety harnesses shall be worn when carrying out work next to a drop where collective protection is not sufficiently safe.
 - .5 The Contractor shall provide a fastening method and safety cable system compliant with section 2.10.12 of the *Safety Code for the Construction Industry (L.R.Q., S-2.1, r. 6)* for each work site or location.
-

Ladders

- .1 All ladders must be at least three rungs taller than the access landing.
- .2 All ladders must be attached at their summit so that they cannot slide sideways. The Contractor shall implement a system so that this regulation is abided by during finishing (flashing, etc).

Scaffolding

- .1 All scaffolding must be inspected and assembled as outlined in the *Safety Code for the Construction Industry (L.R.Q., S-2.1, r. 6)*.
- .2 As needed, plans and compliance certifications must be provided to the Engineer before work begins.
- .3 The Contractor shall make sure that all workers are always protected from falls during scaffolding assembly, as provided in article 3.9.4.5 of the *Safety Code for the Construction Industry (L.R.Q., S-2.1, r. 6)*.

LIFTING MATERIAL

- .1 The Contractor shall provide the Engineer with a mechanical service inspection certificate for each lifting device. Inspections must be carried out just prior to the delivery of the equipment to the work site.
- .2 For all winch installations, the Contractor shall provide the Engineer with the installation method recommended by the manufacturer. If unavailable, the Contractor shall then provide an installation procedure signed and sealed by an engineer. The installation procedure must take into account loadbearing capacity, the amount, weight and location of counterweight and any other detail that may affect the capacity and stability of the device.
- .3 In addition to the mechanical service inspection certificate, the annual inspection certificate and the crane logbook must be aboard all crane and crane-truck cabs.
- .4 Lifting devices shall be positioned in such a way that loads are not carried over workers, occupants or the public.
- .5 The entire lifting area shall be closed off to prevent non-authorized people from entering it.
- .6 The Contractor shall obtain all of the permits at his own expense, in the event the thoroughfare must be temporarily closed off to meet the requirement stipulated in the preceding paragraph or for any other reason pertaining to the safety of workers, occupants or the public.
- .7 The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed or scrapped.
- .8 Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.

PROTECTION AGAINST BURNS

- .1 Individuals assigned to the boilers shall wear long sleeves, safety glasses and a face shield when filling the boilers.
- .2 Individuals working with asphalt or other hot liquids shall wear gloves, long sleeves and safety glasses.

PROTECTION AGAINST FIRE

- .1 Work on construction sites must be carried out in compliance with *Fire Commissioner of Canada Standard CI 301, Standard for Construction Operations, June 1982*. This standard is available at the following website:

http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml
- .2 At the beginning of each shift on every site, the Contractor shall obtain a Hot Work Permit issued by the person in charge of the work location.

- .3 A working portable fire extinguisher suitable to the fire risk shall be available and easily accessible within a 5 m radius from any flame, spark source or intense heat.
- .4 An individual shall be appointed to go on rounds (fire) for a period of 30 minutes after the end of the shift. This individual shall countersign the permit and give it to the person in charge of the work site (or the individual he/she appoints) after the 30 minutes period.
- .5 The storage of propane cylinders shall comply with the **CAN/CSA-B149.2-F00 Propane Storage and Handling Code** and meet the specific conditions outlined in this document. The cylinders shall be stored outdoors, in a safe place, away from any unauthorized handling, in a storage cabinet specially designed for this purpose. The cylinders shall be securely kept upright and locked at all times in a place where no vehicles are allowed, unless the cylinders are protected by bars or the equivalent.
- .6 Compressed gas, fuel tanks or containers must be stored at least 10 m from any buildings.
- .7 The number of propane cylinders on the roof shall not exceed the number of cylinders necessary for a day's work, and cylinders shall at all times be secured upright or held in a cart designed for this purpose.
- .8 All of the cylinders used or stored on the work site shall be equipped with a collar designed to protect the valve.
- .9 Filling the cylinders on the work site is forbidden, unless a procedure compliant with the CAN/CSA B149.2 standard is approved and authorized by the Engineer.

MATERIAL AND WASTE MANAGEMENT

- .1 On the roof, light material and sheet material shall be kept in containers or be securely fastened. In the event this requirement is disregarded in the slightest way, the Engineer may disallow the storage of materials on the roof.
- .2 The preceding paragraph also applies to waste.
- .3 Waste shall be discarded as produced using a waste chute or appropriate containers.
- .4 All waste must be removed from the roof at the end of shifts.
- .5 Unless otherwise authorized by the Engineer, all waste bins must be placed at least 3 m from any structure or building.

GENERAL PROTECTION AND WORK SITE ORGANIZATION

- .1 Regardless of the circumstances and the nature of the work, individuals with access to the work site must wear protective footwear and hard hats. The Contractor shall provide chin cups or ratchet suspension helmets to workers who must bend over or crouch down.
- .2 Covered passageways shall be set up to protect all entrances and exits.
- .3 A safety perimeter on the ground must be placed under the work zone in order to protect the public and the occupants.
- .4 The ground work site, material handling area and boiler area shall be clearly sealed off to prevent occupants or the public from accessing the site and areas.
- .5 Before installing any device that may emit gas or fumes, the Contractor shall receive authorization from the person in charge of the work site, who shall make sure that there is no risk of gas or fumes infiltrating the building's ventilation system.
- .6 The Contractor shall make sure that the work site is kept clean and tidy for the duration of the work.
- .7 Copies of material safety data sheets of all controlled products shall be forwarded to the Engineer and to the person responsible of the work site before work begins.
- .8 The Contractor shall provide sanitary facilities and rest areas compliant with requirements of the *Safety Code for the Construction Industry*.

1.18 HOT WORK

Hot work means any work where a flame is used or a source of ignition may be produced, i.e., riveting, welding, cutting, grinding, burning and heating.

- .1 Before the beginning of work, the contractor must have received the “Hot Work Permit” of PWGSC (ELF 367) completed by the Manager in Charge of Worksite when the duties to be undertaken involve hot work.
- .2 Work on construction sites must be carried out in compliance with Fire Commissioner of Canada Standard CI 301, Standard for Construction Operations, June 1982. This standard is available at the following website:

http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml
- .3 A working portable fire extinguisher suitable to the fire risk shall be available and easily accessible within a 5 m radius from any flame, spark source or intense heat.
- .4 An individual shall be appointed to go on rounds (fire) for a period of 30 minutes after the end of the shift. This individual shall countersign the permit and give it to the person in charge of the work site (or the individual he/she appoints) after the 30 minutes period.
- .5 The storage of propane cylinders shall comply with the *CAN/CSA-B149.2-F00 Propane Storage and Handling Code* and meet the specific conditions outlined in this document. The cylinders shall be stored outdoors, in a safe place, away from any unauthorized handling, in a storage cabinet specially designed for this purpose. The cylinders shall be securely kept upright and locked at all times in a place where no vehicles are allowed, unless the cylinders are protected by bars or the equivalent.
- .6 All of the cylinders used or stored on the work site shall be equipped with a collar designed to protect the valve.
- .7 Filling the cylinders on the work site is forbidden, unless a procedure compliant with the *CAN/CSA B149.2* standard is approved and authorized by the Engineer.

1.19 WELDING AND CUTTING

Note: For welding and cutting activities, make sure that the following conditions are met moreover that the ones mentioned above.

- .1 The works must be carried out in accordance with the articles “3.13 Compressed gas supply” and “3.14 Welding and cutting” of the *Safety Code for the construction industry, S-2.1, r. 6*.
- .2 Work on construction sites must be carried out in compliance with Fire Commissioner of Canada Standard CI 302, Standard for Welding and Cutting, June 1982. This standard is available at the following website:

http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/302/page05.shtml

The welding and cutting devices are excessively dangerous with regard to the fire risk on the building work place. The following precautions must be taken at the time of this type of work:

- .1 Store all compressed gas cylinder on a fireproof fabrics and make sure that the room is well ventilated.
- .2 Store all oxygen cylinders more than 6 metres from a flammable gas cylinder (ex: acetylene) or a combustible such as oil or grease, unless the oxygen cylinder is separated from it by a wall made of non-combustible material as mentioned in the article 3.13.4 of the *Safety Code for the construction industry, S-2.1, r. 6*.
- .3 Set up fireproof fabrics when work of welding is done in superposition and that there is risk of spark fall.
- .4 Store the bottles far from all heat sources.
- .5 Not to store the bottles close to the staircases, exits, corridors and elevators.
- .6 Not to put acetylene in contact with metals with metals such as silver, mercury, copper and alloys of brass having more than copper 65%, to avoid the risk of an explosive reaction.
- .7 Check that welding equipments with electric arc has the necessary tension and are grounded.
- .8 Ensure that the conducting wire of the electric welding equipment are not damaged.
- .9 Place the welding equipment on a flat ground away from the bad weather.

- .10 Move away or protect the combustible materials which can be near the welding equipment.
- .11 Prohibition to weld or cut any closed container.
- .12 Envisage protection measures when welding or cutting is carried out near drains, tanks or other containers containing inflammable materials.
- .13 Do not perform any cutting, welding or work with naked flame on a container, a tank, a pipe or other container containing a flammable or explosive substance unless:
 - .1 Air Samples indicating that work can be made without danger has been taken; or
 - .2 Provisions to ensure the safety of the workers has been done.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 35 13 – Exigences de sécurité

1.2 REFERENCES AND CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.3 HAZARDOUS MATERIAL DISCOVERY

- .1 As per the analysis carried out in 2014 by the Departmental Representative, no hazardous material was found in the Work zone. The report is available upon request.
- .2 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Departmental Representative.
- .3 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Departmental Representative.
- .4 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

1.4 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions and municipal by-laws.

PART 2– PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 – EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 REFERENCES

- .1 Not Used.

1.3 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.

1.4 INDEPENDENT INSPECTION AGENCIES

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

1.5 ACCESS TO WORK

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

1.6 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
 - .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
-

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

1.7 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 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.

1.8 REPORTS

- .1 Submit (4) copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested manufacturer or fabricator of material being inspected or tested.

1.9 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

1.10 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct in locations acceptable to Departmental Representative
- .3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Departmental Representative will assist in preparing schedule fixing dates for preparation.
- .6 Remove mock-up at conclusion of Work or when acceptable to Departmental Representative.
- .7 Samples can be used as a part of the project
- .8 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

1.11 MILL TESTS

- .1 Submit mill test certificates as required of specification Sections.
-

1.12 EQUIPMENT AND SYSTEMS

- .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

PART 2- PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 REFERENCES

- .1 Not Used.

1.3 SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

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

1.5 DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.6 WATER SUPPLY

- .1 Departmental Representative will provide continuous supply of potable water for construction use.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.
- .3 Departmental Representative will pay for utility charges at prevailing rates.

1.7 TEMPORARY HEATING AND VENTILATION

- .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
 - .2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
 - .3 Provide temporary heat and ventilation in enclosed areas as required to:
 - .1 Facilitate progress of Work.
 - .2 Protect Work and products against dampness and cold.
 - .3 Prevent moisture condensation on surfaces.
 - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
 - .5 Provide adequate ventilation to meet health regulations for safe working environment.
 - .4 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.
 - .5 Permanent heating system of building, not to be used when available.
-

- .6 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
 - .1 Conform to applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.
- .7 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.8 TEMPORARY POWER

- .1 Refer to Section 01 35 14 – Special Security Requirements.

1.9 TEMPORARY COMMUNICATION FACILITIES

- .1 Provide and pay for temporary telephone, fax, lines, and equipment necessary for own use and must assure connection to main network and assume all costs for these services.

1.10 FIRE PROTECTION

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

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.

1.3 SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

- .1 Prepare and coordinate with Departmental Representative and the SCC, a site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.5 SCAFFOLDING

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

1.6 HOISTING

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

1.7 SITE STORAGE/LOADING

- .1 Ensure that work is performed within the limits specified in the contract documents. Do not clutter the site unreasonably with materials and equipment.
- .2 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products and do not load or permit to load any part of Work with weight or force that will endanger Work.

1.8 CONSTRUCTION PARKING

- .1 Parking will be permitted on site at hours and in location indicated by Department Representative.
-

1.9 SECURITY

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

1.10 OFFICES

- .1 A Site office is not required.
- .2 Provide marked and fully stocked first-aid case in a readily available location.

1.11 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.12 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.13 CONSTRUCTION SIGNAGE

- .1 Apart from the warning signs, no other sign or other sign may not be installed on site.

1.14 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
 - .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
 - .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
 - .4 Protect travelling public from damage to person and property.
 - .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
 - .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
 - .7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
 - .8 Dust control: adequate to ensure safe operation at all times.
 - .9 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.
-

- .10 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .11 Provide snow removal during period of Work.
- .12 Remove, upon completion of work, haul roads designated by Departmental Representative.

1.15 CLEAN-UP

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

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 REFERENCES

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

1.3 INSTALLATION AND REMOVAL

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

1.4 HOARDING

- .1 Not applicable

1.5 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs, and any other place where the height is superior to 1500 mm.
- .2 Provide as required by governing authorities.
- .3 Provide the appropriate security barriers during construction as per indication on the drawings.

1.6 WEATHER ENCLOSURES

- .1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- .3 Design enclosures to withstand wind pressure and snow loading.

1.7 DUST TIGHT SCREENS

- .1 Provide dust tight screens, insulated partitions and all other necessary protective measures to localize dust generating activities and to prevent spread of dust and debris from work areas that are adjacent of the work space, for protection of workers, finished areas of Work and the public.
- .2 Maintain and relocate protection until such work is complete.

1.8 ACCESS TO SITE

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

1.9 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.10 FIRE ROUTES

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

1.11 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

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

1.12 PROTECTION OF BUILDING FINISHES

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

1.13 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.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 REFERENCES

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

1.3 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.4 AVAILABILITY

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify 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.
-

- .2 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, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.5 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber and sheets on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.6 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Transportation cost of products supplied by Owner will be paid for by Departmental Representative. Unload, handle and store such products.

1.7 MANUFACTURER'S INSTRUCTIONS

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

1.8 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.

1.9 CO-ORDINATION

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

1.10 CONCEALMENT

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

1.11 REMEDIAL WORK

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

1.12 LOCATION OF FIXTURES

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

1.13 FASTENINGS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
 - .2 Prevent electrolytic action between dissimilar metals and materials.
 - .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
 - .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
 - .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
 - .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
-

1.14 FASTENINGS - EQUIPMENT

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

1.15 PROTECTION OF WORK IN PROGRESS

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

1.16 EXISTING UTILITIES

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

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Owner or separate contractor.
- .3 Include in request:
 - .1 Identification of project.
 - .2 Location and description of affected Work.
 - .3 Statement on necessity for cutting or alteration.
 - .4 Description of proposed Work, and products to be used.
 - .5 Alternatives to cutting and patching.
 - .6 Effect on Work of Owner or separate contractor.
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

1.3 MATERIALS

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

1.4 PREPARATION

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

1.5 EXECUTION

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
 - .2 Fit several parts together, to integrate with other Work.
-

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

1.6 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.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Not Used.

1.2 PROJECT CLEANLINESS

- .1 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .2 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .6 Dispose of waste materials and debris off site.
- .7 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .11 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 FINAL CLEANING

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

- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .11 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .13 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .14 Remove dirt and other disfiguration from exterior surfaces.
- .15 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .16 Sweep and wash clean paved areas.
- .17 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .18 Clean roofs, downspouts, and drainage systems.
- .19 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .20 Remove snow and ice from access to building.

1.4 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.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 WASTE MANAGEMENT GOALS

- .1 PWGSC's goal is to reduce the total flux of construction/renovation/demolition waste by 75% and to coordinate waste management requirements with all Divisions of Work for the project. Provide the Departmental Representative with documents certifying that requirements of the Construction Waste Management Plan are followed (recycling, reuse and salvage).

1.2 STORAGE, HANDLING AND PROTECTION

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

1.3 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

1.4 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by existing facility and provide temporary security measures approved by Departmental Representative.

1.5 SCHEDULING

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

1.6 CLEANING

- .1 Source separate materials to be reused/recycled into specified sorting areas.
-

- .2 Clean-up work area as work progresses.
- .3 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.

1.7 WASTE MANAGEMENT

- .1 At completion of Project, prepare « WASTE DIVERSION REPORT for construction, renovation and demolition projects » and provide to the Departmental Representative.

1.8 WASTE MANAGEMENT FORM FOR CONSTRUCTION, RENOVATION AND DEMOLITION PROJECTS.

- .1 Annex A – WASTE DIVERSION REPORT for construction, renovation and demolition projects

Material	Diversion Real Weight (tons)		Final destination and use of diverted material	Total Buried Weight (tons)	TOTAL WEIGHT (tons)	Diversion Rate
	Reused	Recycled				
Masonry and hardscape						
Walls and ceilings						
Metals						
Mechanical						
HVAC						
Plumbing						
Sanitary equipment						
Other						
Doors and windows						
Wood						
Cabinetry and carpentry						
Floor finishes						
Electrical						
Wiring						
Lighting						
Other						
Roofing						
Specialties and other elements						
Cardboard						
Other packaging						
Mixed recycling						
General waste						
Other						
TOTALS						

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Not Used.

1.2 REFERENCES

- .1 Not Used.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request Departmental Representative inspection.
 - .2 Departmental Representative Inspection:
 - .1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Equipment and systems: tested, adjusted and balanced and fully operational.
 - .4 Certificates required by Fire Commissioner Utility companies: submitted.
 - .5 Operation of systems: demonstrated to Owner's personnel.
 - .6 Commissioning of mechanical systems: completed in accordance with common product requirement and copies of final Commissioning Report submitted to Departmental Representative
 - .7 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Departmental Representative.
 - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

1.4 FINAL CLEANING

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

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.
-

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Not Used.

1.2 REFERENCES

- .1 Canadian Environmental Protection Act (CEPA)

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with contractor's representative and Departmental Representative 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.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, **four final copies** of operating and maintenance manuals, and As Built drawings in hard copy format as well as two digital copies on USB key.
- .3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.

1.5 FORMAT

- .1 Organize data as instructional manual.
 - .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
 - .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
 - .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
 - .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
-

- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.

1.6 CONTENTS - PROJECT RECORD DOCUMENTS

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

1.7 AS -BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
 - .2 Store record documents and samples in field office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
 - .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
 - .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
 - .5 Keep record documents and samples available for inspection by Departmental Representative.
-

1.8 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

1.9 FINAL SURVEY

- .1 Not Used.

1.10 EQUIPMENT AND SYSTEMS

- .1 For each item of equipment and each system include description of unit or system, and component parts.
 - .1 Give function, normal operation characteristics and limiting conditions.
 - .2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
 - .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
 - .3 Include installed colour coded wiring diagrams.
 - .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
 - .1 Include regulation, control, stopping, shut-down, and emergency instructions.
 - .2 Include summer, winter, and any special operating instructions.
 - .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
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- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control.
- .15 Additional requirements: as specified in individual specification sections.

1.11 MATERIALS AND FINISHES

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

1.12 MAINTENANCE MATERIALS

- .1 Spare Parts:
 - .1 Provide spare parts, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to location as directed; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to Departmental Representative.
 - .2 Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit prior to final payment.
- .2 Extra Stock Materials:
 - .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to location as directed; place and store.
 - .4 Receive and catalogue items.
 - .1 Submit inventory listing to Departmental Representative.
 - .2 Include approved listings in Maintenance Manual.

- .5 Obtain receipt for delivered products and submit prior to final payment.
- .3 Special Tools:
 - .1 Provide special tools, in quantities specified in individual specification section.
 - .2 Provide items with tags identifying their associated function and equipment.
 - .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue items.
 - .1 Submit inventory listing to Departmental Representative.
 - .2 Include approved listings in Maintenance Manual.

1.13 DELIVERY, STORAGE AND HANDLING

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and for review by Departmental Representative.

1.14 WARRANTIES AND BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
 - .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Departmental Representative approval.
 - .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
 - .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
 - .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
 - .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
 - .7 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.
 - .8 Conduct joint (4) month and (9) month warranty inspection, measured from time of acceptance, by Departmental Representative Engineer.
-

- .9 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and commissioned systems such as fire protection, alarm systems, sprinkler systems, lightning protection systems.
 - .3 Provide list for each warranted equipment, item and feature of construction or system indicating:
 - .1 Name of item.
 - .2 Model and serial numbers.
 - .3 Location where installed.
 - .4 Name and phone numbers of manufacturers or suppliers.
 - .5 Names, addresses and telephone numbers of sources of spare parts.
 - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .7 Cross-reference to warranty certificates as applicable.
 - .8 Starting point and duration of warranty period.
 - .9 Summary of maintenance procedures required to continue warranty in force.
 - .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
 - .11 Organization, names and phone numbers of persons to call for warranty service.
 - .12 Typical response time and repair time expected for various warranted equipment.
 - .4 Contractor's plans for attendance at (4) and (9) month post-construction warranty inspections.
 - .5 Procedure and status of tagging of equipment covered by extended warranties.
 - .6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .10 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification to follow oral instructions.
 - .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

1.15 WARRANTY TAGS

- .1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Departmental Representative.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of acceptance until project is accepted for occupancy.
- .4 Indicate following information on tag:
 - .1 Type of product/material.
 - .2 Model number.
 - .3 Serial number.
 - .4 Contract number.
 - .5 Warranty period.
 - .6 Inspector's signature.
 - .7 Construction Contractor.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Not Used.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Demonstrate operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of final inspection.
- .2 Owner: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed-upon times.
- .3 Preparation:
 - .1 Verify conditions for demonstration and instructions comply with requirements.
 - .2 Verify designated personnel are present.
 - .3 Ensure equipment has been inspected and put into operation in accordance with electromechanical Sections corresponding.
 - .4 Ensure testing, adjusting, and balancing has been performed in accordance with Section 01 91 13 - General Commissioning (Cx) Requirements and equipment and systems are fully operational.
- .4 Demonstration and Instructions:
 - .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at scheduled times, at the equipment location.
 - .2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.
 - .3 Review contents of manual in detail to explain aspects of operation and maintenance.
 - .4 Prepare and insert additional data in operations and maintenance manuals when needed during instructions.
- .5 Time Allocated for Instructions: ensure amount of time required for instruction of each item of equipment or system as follows:
 - .1 Not Used.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative approval.
 - .3 Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
 - .4 Give time and date of each demonstration, with list of persons present.
 - .5 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.
-

1.4 QUALITY ASSURANCE

- .1 When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:
 - .1 Instruct Owner's personnel.
 - .2 Provide written report that demonstration and instructions have been completed.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 35 29.06 – Health and Safety Requirements.
- .2 Section 01 74 11 – Cleaning
- .3 Section 01 74 21 – Construction/Demolition and Waste Management and Disposal.

1.2 REFERENCES

- .1 CSA International
 - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures
- .2 Before starting work on site, submit a detailed plan for waste reduction in accordance with Section 01 74 21 - Construction/Demolition and Waste Management and Disposal.

1.4 MANAGEMENT AND DISPOSAL OF WASTE

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

1.5 SITE CONDITIONS

- .1 Review "Designated Substance Report" and take precautions to protect environment.
- .2 If material resembling spray or trowel-applied asbestos or other designated substance listed be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
 - .1 Proceed only after receipt of written instructions have been received from Departmental Representative.
- .3 Notify Departmental Representative before disrupting building access or services.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Inspect building site with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
-

3.2 PREPARATION

- .1 Protection of In-Place Conditions:
 - .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features and parts of building to remain in place. Provide bracing and shoring required.
 - .2 Keep noise, dust, and inconvenience to occupants to minimum.
 - .3 Protect building systems, services and equipment.
 - .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
 - .5 Do Work in accordance with Section 01 35 30 - Health and Safety Requirements.
- .2 Demolition/Removal Work
 - .1 Remove the elements and structures identified.
 - .2 Removal of hard coatings, curbs and gutters.
 - .1 Cut at right angles to the adjacent surfaces not affected by the work, using a saw or other means approved by the Departmental Representative.
 - .2 Protect the load transfer devices and the adjacent joints.
 - .3 Protect existing precast concrete panels.
 - .3 Remove elements of existing building to allow implementation of new construction.
 - .4 Resize the banks of the partially demolished building components to tolerances specified by the Departmental Representative to facilitate the introduction of new elements.
- .3 Special Requirements
 - .1 Demolition Work particular to the project consists in the dismantling of existing windows and conditioning of bars. At all locations where replacement of windows is indicated on the plans (FL-3, FB-2, FB-15, FB-16, FB-20), this corresponds to the prior dismantling and treatment of bars against rust.
 - .2 For the extent of demolition work of existing windows and treatment of bars against rust, refer to plans A05 to A14. Refer to section 01 14 00 – Work restrictions, for special requirements of the project.

3.3 CLEANING

- .1 Progress cleaning: clean in accordance with Section 01 74 11 – Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
- .3 Refer to the drawings and specifications for demolition to know what materials and materials to be recovered for reuse / reemployment.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition and Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
- .5 Remove existing windows dismantled and stored as directed by the Departmental Representative.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 08 50 00 – Windows.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM A53/A53M-99b, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A307-97, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 Canada Green Building Council (CGBC)
 - .1 CAN/CGSB-1.40- 97, anticorrosion paint for primer, alkyd resins for structural steel.
 - .2 CAN/CSA-G164-M92(C1998 Hot dip galvanizing of irregularly shaped objects.
- .3 CSA International
 - .1 CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel.
 - .2 CAN/CSA-G164-M92(C1998), Hot dip galvanizing of irregularly shaped objects.
 - .3 CAN/CSA-S16-01, Limit States Design of Steel Structures.
 - .4 CSA W48, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .5 CSA W59-M1989 C1998, Welded Steel Construction (Arc Welding) (Metric).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop drawings shall indicate or show the materials materials, their dimension, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 DELIVERY, STORAGE AND HANDLING

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

PART 2 - PRODUCTS.

2.1 MATERIALS

- .1 Steel sections and plates: to CSA G40.20/G40.21, Grade 300W.
 - .2 Welding materials: to CSA W59.
 - .3 Welding electrodes: to CSA W48 Series.
 - .4 Stainless steel tubing: to ASTM A269, Type 316 to weld seamless longitudinal **AISI No 4 finish on the exposed surfaces only.**
 - .5 Bolts and anchor bolts: to ASTM A325.
-

2.2 METAL FABRICATION - GENERAL

- .1 The works must be straight, square, aligned and consistent with the dimensional requirements; joints should be tight and properly secured.
- .2 Build structures by welding.
- .3 Unless otherwise indicated, tapping flathead screws and locking nut must be used for the screw.
- .4 Wherever possible, structures should be adjusted and assembled in the shop and delivered ready to assemble.
- .5 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
- .6 All works to be galvanized shall be after their finishing.

2.3 FINISHES

- .1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to CAN/CSA-G164.

2.4 LIST OF WORKS

- .1 The following list is not restrictive and does not work as described elsewhere, shown in the plans or required for completion of work.
 - .1 Sill in 4.5 mm stainless steel plates folded, grade 316.
 - .2 Pressure stainless steel plates folded 6mm x 100mm, grade 316.
 - .3 external stainless steel plates folded 3mm x window width, pre-perforated, full outline, holes 6mm diameter, 3 mm spacing in both directions, grade 316.
 - .4 Drip in 4.5 mm stainless steel plates, bent, 316 grade.
 - .5 Angles interior finish stainless steel 25x20x3 mm pre-drilled, grade 316.
 - .6 Vertical support plates 6mm thick galvanized steel, bent in the shape of "L", 38 x 117 x 850 mm with welded reinforcement plates.
 - .7 Any other evidence indicated the details of the plans.
- .2 All metal structures that are not explicitly or clearly described on plans and specifications of structure or in other sections of this specification are part of the works in this section.
- .3 All fasteners must be stainless steel finish 316.

2.5 ANCHORAGES TO SUPPORT PRESSURE PLATES

- .1 Bolts and washers spring 9 mm in diameter (3/8").
- .2 Adhesive designed for locking and sealing threaded parts, having the following characteristics:
 - .1 Cures when confined in the absence of air;
 - .2 Prevents loosening due to shock and vibration;
 - .3 Must be able to allow disassembly with standard hand tools;
 - .1 Breakaway Torque unscrewing ISO 10964.

2.6 ANCHORAGE PRESSURE PLATES TO CONCRETE

- .1 Type chemical anchors to the adhesive hybrid urethane methacrylate compound, cement and water, fast cure, having the following characteristics:
 - .1 Fixation reliable and fast hardening into hollow materials over a wide temperature range.
 - .2 Yield reliable masonry including brick and mortar are of uneven quality, even if the position and gap size are unknown.

- .3 Quick and easy Distribution even in temperatures near freezing.
- .4 Must be adapted for use with strainer and holder.
- .5 Material properties of the cured adhesive:
 - .1 Compressive Strength ASTM D695/DIN 53454: **51.1 MPa (> 7410 psi)**
 - .2 Modulus ASTM ASTM C 307: > 3500 MPa (> 5.07 x 10⁵ psi)
 - .3 Water Absorption ASTM D 570: < **2.5 % (< 2 %)**
 - .4 Electrical Resistance DIN/VDE 0303T3: ~ **2 x 10¹¹ OMH/cm (~ 5.1 x 10¹¹ OMH/po)**
 - .5 Typical curing time: **60 minutes à 20°C.**
- .2 Threaded inserts and threaded bolts with appropriate washers and spring 9mm in diameter (3/8").
- .3 Colanders adapted mesh cylindrical and closed at one end to hold the adhesive during the installation of threaded inserts.
 - .1 Adjust the length of the strainer before installing.
- .4 Adhesive designed for locking and sealing threaded parts, having the following characteristics:
 - .1 Cures when confined in the absence of air;
 - .2 Prevents loosening due to shock and vibration;
 - .3 Must be able to allow disassembly with standard hand tools;
 - .4 Technical properties:
 - .1 Breakaway Torque unscrewing: **ISO 10964.**
- .5 All fasteners are secure frames in stainless steel.

2.7 STAINLESS STEEL PRESURE PLATES INSTALLED IN FRONT OF WINDOW FROM EXTERIOR.

- .1 Stainless steel plates (6 mm thick) are prefabricates in shop and typically installed as shown in drawings.
- .2 Plates are fixed to concrete with threaded sleeve anchors.

2.8 STAINLESS STEEL PERFORATED PLATES. PROTECTION FOR VENTILATION DEVICES.

- .1 Provide for the installation in the window of cells (types 3 and FL-FB-4) perforated plates closing stainless steel only for exterior side, as shown on drawings adapted frameworks provided by the manufacturer windows. Interior side protection plates are fabricated and installed by windows manufacturer in shop (see section 08 50 00).
- .2 These plates must follow the dimensions of the ventilation.
- .3 These plates are secured with vandal proof screws as shown in the drawings.
- .4 Between the plate and screws and between the plate and the aluminum frame should be provided washers and self-adhered butyl flexible tapes.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Unless otherwise specified, perform the welding work in accordance with CSA W59.
 - .2 Install metal structures of square, plumb and level, accurately aligned and adjusted, and ensure that the joints and crossings are tight.
-

- .3 Provide and install appropriate anchors to blow existing drywall and approved by the Departmental Representative of such studs, staples, anchors, bolts and sockets expansion and toggle bolts.
- .4 The apparent fixing devices must be compatible with the material they pass through or to which they are subject.
- .5 Assemble components on site or by welding or using bolts according to the CAN/CSA-S16.1.

3.2 INSTALLATION OF SECURITY FRAME

- .1 The Contractor shall pre-drill the shop pressure plates and install them in place with anchors as specified by the manufacturer's instructions.
- .2 Lighters and drips into stainless steel plates.
 - .1 Provide for coordination with the windows installer;
 - .2 See Section 08 50 00 - Windows for installation.
- .3 Weld vertical supports to the bars using existing spot welds.
- .4 Allow the thread to the holes of the vertical supports of galvanized steel welding between the window frames.
- .5 Provide spacing between the plates of 3mm stainless steel pressure and galvanized steel vertical supports at their installation.
- .6 Marked concrete and drill the appropriate places using an electro-pneumatic drill.
- .7 Insert threaded sockets in the adhesive using appropriate sieves and bolt. Drying time of the adhesive to be expected according to manufacturer's instructions.
- .8 Solder the outer plates perforated plates to pressure with spot welds.
- .9 Fix the tightening of the bolts using an adhesive designed for locking and sealing threaded parts.
- .10 Solder finish interior angles to existing bars.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Section 08 50 50 – Windows.

1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
- .2 Canadian Urethane Foam Contractors' Association Inc. (CUFCA)
- .3 Green Seal Environmental Standards
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 South Coast Air Quality Management District (SCAQMD), California State SCAQMD Rule 1113-[06], Architectural Coatings.
- .6 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S101-04, Fire Endurance Tests of Building Construction and Materials.
 - .2 CAN/ULC-S102-03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
 - .3 CAN/ULC-S705.1-01, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
 - .4 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.

1.3 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 two copies WHMIS MSDS - Material Safety Data Sheets.
- .3 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
 - .1 Test reports: submit certified test reports for insulation from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
 - .2 Submit test reports in accordance with CAN/ULC-S101 for fire endurance and CAN/ULC-S102 for surface burning characteristics.
 - .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning.
 - .4 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.

1.4 QUALITY ASSURANCE

- .1 Applicators to conform to CUFCA Quality Assurance Program.
 - .2 Qualifications:
-

- .1 Installer: person specializing in sprayed insulation installations with 5 years documented experience approved by manufacturer.
- .2 Manufacturer: company with minimum 5 years experience in producing of material used for work required for this project, with sufficient production capacity to produce and deliver required units without causing delay in work.
- .3 Mock-up:
 - .1 Construct a mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up of sprayed insulation between two windows frames as shown in drawings.
 - .3 Mock-up may not be part of finished work.
 - .4 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with sprayed insulation work.
- .4 Health and Safety Requirements: worker protection:
 - .1 Protect workers as recommended by CAN/ULC-S705.2 and manufacturer's recommendations:
 - .2 Workers must wear gloves, respirators, dust masks, long sleeved clothing, eye protection and protective clothing when applying foam insulation.
 - .3 Workers must not eat, drink or smoke while applying foam insulation.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
 - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 SITE CONDITIONS

- .1 Ventilate area in accordance with Section 01 51 00 - Temporary Utilities.
- .2 Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during and 24 hour after application to maintain non-toxic, unpolluted, safe working conditions.
- .3 Provide temporary enclosures to prevent spray and noxious vapours from contaminating air beyond application area.
- .4 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.
- .5 Apply insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Insulation: spray polyurethane to CAN/ULC-S705.1.
 - .2 Primers: in accordance with manufacturer's recommendations for surface conditions.
 - .1 Maximum VOC limit 100 g/l to SCAQMD Rule 1113.
-

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 APPLICATION

- .1 Apply insulation to clean surfaces in accordance with CAN/ULC-S705.2 and manufacturer's printed instructions.
- .2 Use primer where recommended by manufacturer.
- .3 Apply sprayed foam insulation in thickness as indicated in drawings.

3.3 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services:
 - .1 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.4 CLEANING

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

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 08 50 50 Windows.

1.2 REFERENCES

- .1 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 800-92, Voluntary Specification and Test Methods for Sealants.
- .2 ASTM International
 - .1 ASTM C-661, Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.
 - .2 ASTM C-679, Standard Test Method for Tack-Free Time of Elastomeric Sealants.
 - .3 ASTM C-719, Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cycling Movement.
 - .4 ASTM C-794, Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
 - .5 ASTM C-920, Standard Specification for Elastomeric Joint Sealants.
 - .6 ASTM C-1135, Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants.
 - .7 ASTM D-412, Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers – Tension.
 - .8 ASTM D-624, Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - .9 ASTM D-2202, Standard Test Method for Slump of Sealants.
 - .10 ASTM D-2240, Standard Test Method for Rubber Property - Durometer Hardness.
- .3 Office des normes générales du Canada (CGSB)
 - .1 CAN/CGSB-19.13-M87, Mastic d'étanchéité à un seul composant, élastomère, à polymérisation chimique.
- .4 Santé Canada/Système d'information sur les matières dangereuses utilisées au travail (SIMDUT)
 - .1 Fiches signalétiques (FS).

1.3 SUBMITTALS

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit duplicate samples of each type of material and colour.

1.4 QUALITY ASSURANCE/MOCK-UP

- .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up to show location, size, shape and depth of joints complete with back-up material, primer, caulking and sealant. Mock-ups may be used for final Work.
 - .3 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with sealant work.
-

1.5 DELIVERY, STORAGE, AND HANDLING

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

1.6 SECURITY AND ENVIRONMENT REQUIREMENTS

- .1 Respect requirements laid out by the Workplace Hazardous Materials Information System (WHMIS) concerning use, handling, storing and disposal of hazardous materials as well as the labeling and supply of security information sheets recognized by Work Canada.
- .2 Obey manufacturer recommendations concerning temperatures, relative humidity rate and the appropriate humidity level for the application and drying of sealant materials, as well as special directives concerning their use.

1.7 SITE CONDITIONS

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

PART 2 – PRODUCTS

2.1 SEALANT MATERIALS

- .1 Sealant and weather-stripping materials must satisfy the following requirements.
 - .1 They must conform to applicable industry and government standard security and performance norms, or go above and beyond these norms.
 - .2 They must be manufactured and transported such that all steps of the process, including the elimination of generated waste, conform to appropriate government laws, including, in the case of installations situated in Canada, the Fisheries Act and the Canadian Environmental Protection Act.
 - .2 Sealant and weather-stripping material should neither contain nor be fabricated with the following components: aromatic solvents, talc or asbestos fibres, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, barium and barium derivatives, except barium sulphate.
-

- .3 Sealant and weather-stripping products shall not contain more than 5% in weight (in total) volatile organic compounds (VOC), the percentage being calculated using quantities necessary for the preparation of the product.
- .4 In an effort to minimise health risks and to maximise product performance, insure that all products are accompanied by detailed instructions outlining the application method and appropriate means of waste disposal.
- .5 Weather-stripping products that off-gas toxic chemicals or that are not certified as being resistant to mould shall not be used in air-treatment equipment.
- .6 If there exists an alternative to the use of toxic chemicals, restrict usage to locations where the fumes can be evacuated to the outside or to areas where they will be contained behind air barriers, or apply toxic chemicals several months before occupation to allow fumes to dissipate as much as possible.
- .7 Products used to execute Work of the present section must have the following characteristics: water-based, water-soluble, washable in water, inflammable, biodegradable, low VOC content, manufactured without any component presenting potential harm to the ozone in the upper atmosphere, manufactured without any component that may cause smog to form in the lower atmosphere, containing neither methylene chloride nor chlorinated hydrocarbon.
- .8 Selected sealant materials, excluding those addressed in the CAN/CGSB-19.1 and the CAN/CGSB-19.18 standards, must appear on the list of approved products published by the *Commission d'homologation des produits d'étanchéité de l'ONGC (CGSB)*. In the case of sealant material approved with a primer, only the primer mentioned in the approval may be used with said sealant material.

2.2 SEALANT MATERIAL DESIGNATIONS

- .1 Primer: as recommended by manufacturer.
- .2 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .3 Sealant Material:
 - .1 Type 1: Low-modulus, high-performance, multi-component, polyurethane-based elastomeric sealant.
 - .1 Non-sagging product, conform to CAN/CGSB-19.13 standard, colour chosen by Departmental Representative.
 - .1 Excellent for moving joints
 - .2 Low modulus of elasticity
 - .3 Flexible and durable consistency.
 - .4 Excellent resistance to tearing
 - .5 Conceived to allow a +100% / -50% movement.
 - .6 Adheres to a majority of materials.
 - .7 Excellent resistance to ageing.
 - .8 Conform to ASTM C920 standards, NS grade, type S class 25.
 - .9 Application temperature: 4°C to 38°C
 - .10 Service temperature: -40°C to 77°C
 - .11 Curing rate: dry to the touch (3h); final (7 to 10 days).
 - .12 Reversible deformation: > 80% ASTM C719.
 - .13 Shore A Hardness: conform to the ASTM D-2240 standard.
 - .14 Tensile properties: conform to ASTM D-412 standard.
 - .15 Chemical resistance: good resistance to water, to diluted acids and to diluted alkalis.

- .2 Type 2: Silicone sealer with medium modulus, conforming to norm ASTM C920, Type S, Grade NS, neutral curing and high performance.
 - .1 Appropriate for glazing, structural glazing and all other weather stripping applications.
 - .2 Technical properties:
 - .1 Tack-free time (ASTM C-679): 20 to 40 min.
 - .2 Sag (ASTM D-2202): 0 to 0.1 mm
 - .3 Tooling time – Skinning: 10 to 20 min
 - .4 After 14 days curing at 25°C, 50% R.H: Hardness (Shore A) – ASTM C-661: 37-40
 - .5 Tensile strength at maximum elongation (ASTM D-412): 1.52 to 1.59 MPa
 - .6 Elongation (ASTM D-412): 235 to 260 %
 - .7 Tensile strength at 100% elongation (ASTM C-1135): 0.62 to 0.69 MPa
 - .8 Tear strength (ASTM D-624): 6.14 to 7.02 kN/m
 - .9 Peel Strength – aluminum and glass (ASTM C-794): 2.81 à 3.86 kN/m
 - .10 Cyclic movement (ASTM C719): +50% / -50%
- .3 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 Neoprene or Butyle Rubber.
 - .1 Round solid rod, Shore A hardness 70.
 - .3 High density foam.
 - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m³ density, or neoprene foam backer, size as recommended by manufacturer.
 - .4 Bond breaker tape.
 - .1 Polyethylene bond breaker tape which will not bond to sealant.
- .4 Highly adhesive and elastic, cross-linked butyl preformed tape with a continuous integral EPDM shim, having the following characteristics:
 - .1 Dimensions: as indicated on plans.
 - .2 Conforming to 804.3, 806.3 and 807.3 of the AAMA 800-92 standard.
 - .3 Hardness: 57 Durometer Shore “OO”
 - .4 Service temperature range: -54°C (-65°F) to 93°C (200°F)
 - .5 Application temperature range: -7°C (20°F) to 49°C (120°F)
 - .6 Shelf Life: 1 Year normal storage condition below 27°C (80°F)
 - .7 Excellent resistance to heat, cold and sun; no sagging and weeping or staining after 2 months at 93°C (200°F), -29°C (-20°F).
 - .8 Excellent adhesion after 1000 hours exposure in accelerated weatherometer, cycling test unit.

2.3 SEALANT SELECTION

- .1 Perimeters of exterior wall openings and window frames, as indicated in drawings: type 1 sealant.
- .2 Perimeters of security frames, as detailed and itemized: type 1 sealant.
- .3 Cross-linked butyl preformed tape: at aluminum window frame and pressure plate outer edges, to be placed during the window and security frame installation, as indicated on the plans.
- .4 Perimeter of double-sealed glazing: type 2.

2.4 JOINT CLEANER

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

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for joint sealants installation in accordance with manufacturer's written instructions.

3.2 SURFACE PREPARATION

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

3.3 PRIMING

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

3.4 BACKUP MATERIAL

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

3.5 MIXING

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

3.6 APPLICATION

- .1 Sealant:
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.

- .4 Apply sealant using gun with proper size nozzle.
- .5 Use sufficient pressure to fill voids and joints solid.
- .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
- .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
- .8 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing:
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.
- .3 Ambient Conditions:
 - .1 Ensure that ambient conditions under the temporary shelter are >12°C and/or respect all application methods of the support and material in accordance with instructions and temperatures prescribed by the manufacturer.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean adjacent surfaces immediately.
 - .3 Remove excess and droppings, using recommended cleaners as work progresses.
 - .4 Remove masking tape after initial set of sealant.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.8 PROTECTION

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

END OF SECTION

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 05 50 00 Metal fabrication
- .2 Section 07 21 29.03 – Sprayed Insulation – Polyurethane Foam
- .3 Section 07 92 00 – Joint Sealants
- .4 Section 08 80 50 Glazing

1.2 RÉFÉRENCES

- .1 Aluminum Association (AA)
 - .1 AA DAF 45OL-03(R2009), Designation System for Aluminum Finishes.
 - .2 American Architectural Manufacturers Association (AAMA)
 - .2 AAMA 501, Methods of Test for Exterior Walls.
 - .3 AAMA 1503, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
 - .3 Association canadienne de normalisation (CSA)/CSA International
 - .1 AAMA/WDMA/CSA 101/I.S.2/A440-11(R2016), NAFS - North American Fenestration Standard for Windows, Doors, and Skylights.
 - .2 CSA A440S1-09, Canadian Supplement to AAMA/WDMA/CSA 101/1.S.2/A440, NAFS - North American Fenestration Standard for Windows, Doors, and Skylights.
 - .4 CAN/CSA-A440.2-14/A440.3-14, Fenestration energy performance/User guide to CSA A440.2, Fenestration energy performance.
 - .5 CAN/CSA-A440.4-07(R2016), Window, Door, and Skylight Installation
 - .6 CAN/CSA-Z91-02(R2013), Health and Safety Code for Suspended Equipment Operations.
 - .7 CAN/CSA-Z809-08, Sustainable Forest Management.
 - .4 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A 123/A 123M-15, Standard Specification for Zinc (Hot-Dip galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM B 221, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - .3 ASTM C-203, Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.
 - .4 ASTM C-518, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - .5 ASTM D-1621, Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
 - .6 ASTM D-2126, Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
 - .7 ASTM D-2842, Standard Test Method for Water Absorption of Rigid Cellular Plastics.
 - .8 ASTM E-90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
 - .9 ASTM E-96, Standard Test Method for Water Vapor Transmission of Materials.
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- .10 ASTM E-283, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- .11 ASTM E-330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .12 ASTM E-331, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- .13 ASTM E-1425, Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems.
- .14 ASTM E 1748-95(2009), Standard Test Method for Evaluating the Engagement Between Windows and Insect Screens as an Integral System.
- .5 Laboratoires des assureurs du Canada (ULC)
 - .1 CAN/ULC-S102.2-M, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies.
- .6 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001 V5-2-2015, FSC Principle and Criteria for Forest Stewardship.
- .7 Green Seal (GS)
 - .1 GS-11-11, Paints and Coatings.
- .8 Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual – Applicable Version.
 - .1 MPI #79, Primer, Alkyd, Anti-Corrosive for Metal.
- .9 South Coast Air Quality Management District (SCAQMD)
 - .1 SCAQMD Rule 1113-A2016, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit a full size mock-up for each window type including all frames and accessories, at least one (1) sealed unit, and modified ventilation units, in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit colour samples prior to fabrication and production.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 -Submittal Procedures.
 - .2 Shop drawings should clearly illustrate: the nature of the materials, full size details in plan and section of the top rail, uprights and the sill for each type of frame and sash; movement joints in frames and mullions as well as rail details anticipated for absorption of movements of the structural frame; window panes with shims and interior and exterior mouldings; elements such as sealant and backup materials for seal joints, membranes, weather-stripping insulation; the interaction between frames and third-party wood elements; exposed finishes; Work dimensions, anchor details and fastening elements; the location of the manufacturer's information plate; the exposed and non exposed hardware; the junctions of windows composed or separated by mullions or rails.
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1.5 TEST REPORTS

- .1 Submit a recent independent and approved laboratory report, certifying compliance with specifications.
 - .1 Air tightness – Category A-3.
 - .2 Water tightness – Category B-7 (differential static pressure, 700 Pa).
 - .3 Resistance to wind loads – Category C-5 (differential static pressure on either side of the window, +2.5 kPa).
 - .4 Condensation resistance test – Category I-58.3.

1.6 MAINTENANCE GUIDES

- .1 Provide necessary instructions for aluminum window maintenance and cleaning.

1.7 CALCULATIONS

- .1 Submit calculation required according to Section 01 33 00 – Submittal Procedures.
- .2 Specify physical and structural properties of window elements and submit calculations as well as dimensional constraints and assembly requirements.

1.8 EQUIVALENT PRODUCTS

- .1 A window product and its related elements and materials, which is equivalent to the one described in this section, must be provided in written form in accordance with the article GI15 – Approval of Alternative Materials of R2710T General Instructions.

1.9 FIELD MEASURES

- .1 Prior to factory manufacturing of windows to be integrated to the building, the Contractor shall verify on site all necessary dimensions necessary (even those indicated on drawings) in order to insure that all adjustments have been made in order to respect both the conditions of existing materials and those occasioned by materials to be incorporated within the context of Work. This exercise shall take into account the installation of all hardware and other accessories that need to have adequate space for their use. Shop drawings must show existing constraints and proposed solutions.
- .2 The start of window fabrication is considered proof that the existing conditions are acceptable for window installation. Any necessary modifications are the responsibility of the Contractor and must be submitted and pre-approved in advance by the Departmental Representative.
- .3 All windows that are incompatible with existing conditions shall be replaced at the expense of the Contractor.

1.10 GUARANTEE

- .1 Guarantee – defects and weathertightness:
 - .1 For Work included in the present section, section 08 50 00 – Windows, the 12 month guarantee period is extended to 24 months.
 - .2 The Contractor must certify that the windows are guaranteed by manufacturer for a 5 years period against all defects and loss of weathertightness in regular use of windows upon reception of Certificate for Substantial Completion. Contractor shall submit the manufacturer's warranty documents to the Departmental Representative prior to issuance of the Certificate of completion, according with article CG3.13 of R2830D general conditions – Execution and control of the work.

- .2 Guarantee – exterior finishes:
 - .1 For Work included in the present section, section 08 50 00 – Windows, the 12 month guarantee period is extended to 24 months.
 - .2 The Contractor must certify that the exterior finishes are guaranteed by manufacturer for a 10 years period, in regular use of windows upon reception of Certificate for Substantial Completion. Contractor shall submit the manufacturer's warranty documents to the Departmental Representative prior to issuance of the Certificate of completion, according with article CG3.13 of R2830D general conditions – Execution and control of the work.
- .3 Guarantee for sealed units: refer to section 08 80 50 – Glazing.

1.11 SHIPPING, STORAGE AND HANDLING

- .1 Purchase orders: comply with manufacturer instructions concerning purchase orders and provision delays in order to avoid construction delays.
- .2 Packaging, shipping, handling and unloading: Ship materials in original manufacturer's packaging, unopened, undamaged and having the identification labels intact.
- .3 Storage and protection: Store materials in a weather safe location. Handle window materials and components in such a way as to avoid their damage. Protect aluminum window materials and components against damages which could be caused by the elements themselves, construction work and other work susceptible to harm them before, during and after aluminum window installation.

1.12 SCHEDULING

- .1 Co-ordinate Work described in the present section with the installation of drip edges and ledges to be fixed on the windows, security frames, pressure plates, support shims, protection angles and perforated stainless steel plates.

1.13 MANUFACTURER SUPERVISION

- .1 The installation of the products described in this section shall be supervised (at a minimum) by the manufacturer on site, in order for manufacturer to be aware of procedures and installation conditions, and to take note of any irregularities during installation period.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- .1 System output requirements for aluminum frame windows.
 - .1 Wind resistance: Provide a system, including anchoring devices, able to withstand nominal pressures due to wind resistance in accordance with standards relative to the geographic location of the building. Quebec Region, Port Cartier City. Nominal pressures are base on the Québec Construction Code, Applicable Edition.
 - .2 Air infiltration: The sample must be subjected to tests conducted in accordance with the ASTM E 283 standard. The filtration level shall not be superior to 0.06 ftm/pi(0.3 l/s x m) at a differential static pressure of 6.24 lb/ft(300 Pa).
 - .3 Water resistance: The sample must be subjected to tests conducted in accordance with the ASTM E 331 standard. There shall be no water leakage at a minimal differential static pressure of 8 lb/ft(383 Pa) as defined by the AAMA 501 Standard.
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- .4 Uniform load: an acceptable static air load of 20 lb/ft(958 Pa) shall be applied in both positive and negative directions in accordance with the ASTM E 300 standard. It must not deflect more than L/175 of a span at any part of the frame. A test placing 1.5 times the admissible load, there should be no broken glass and no permanent deformation of the window components of more than 0.2% of their clear span
- .5 Seismic loads: Provide a system that is resistant to seismic and oscillatory movement in accordance with the Quebec Construction Code, Ed. 2005.
- .6 Thermal transfer (U value): to AAMA 1503.
- .7 Condensation resistance facto: to AAMA 1503.
- .8 Sound transfer coefficient (STC) and Outdoor-Indoor transmission coefficient (OITC): to ASTM E1425 & ASTM E90.

2.2 WINDOWS-FIXED ELEMENTS

- .1 Aluminum frame window system having a nominal dimension of 50.8 x 114.3mm (2 in. x 4.5 in.); without thermal bridge, rear glazing, with weather-stripping (structural sealant) and assembly by screw and fluting. Type of window Kawneer with 512 Ventrow Ventilators, Isolock.
- .2 Finish/colour: Anodized Bronze # 40.
- .3 Tous les cadrages doivent être isolés à l'aide d'un produit de polystyrène expansé, profilé pour épouser parfaitement la forme des cadres, et ayant les caractéristiques suivantes :
 - .1 Résistance thermique : 0,74 m² x °C/W/25mm ASTM C-518;
 - .2 Résistance à la compression (min.) : 140 kPa ASTM D-1621;
 - .3 Résistance à la flexion (min.) : 268 kPa ASTM C-203;
 - .4 Perméabilité à la vapeur d'eau (max.) : 2,8 perm ASTM E-96;
 - .5 Absorption d'eau (max.) : 3% ASTM D-2842;
 - .6 Stabilité dimensionnelle (max.) : 0.5% ASTM D-2126;
 - .7 Propagation de la flamme : < 140 CAN/ULC S102.2M
 - .8 Fumée développée : < 360 CAN/ULC S102.2MFix frames with security screws as shown in drawings.
- .4 Provide stainless steel perforated plates installation in windows frames of cells (types FL-3) only in the interior side.
- .5 Spandrel panels:
 - .1 Panel to substitute fixed glazing: Sandwich panel with aluminum plate 3 mm, factory-applied polyurethane insulation, 3 mm aluminum plate anodized bronze no. 40. Total thickness of the panel eardrum will be checked to match the thickness of the glass to be replaced in cases where we do not demolished the existing framework. Maximum Thickness: 25 mm.

2.3 VENTILATION UNIT

- .1 To Insert" type single modular ventilator, equipped with a thermal barrier, complying with the CAN/CSA3-A440 standard.
- .2 Other product characteristics:
 - .1 Rain barrier screen in front of ventilator, preventing contact between rain and wind stop.
 - .2 Permits free circulation of natural air.
 - .3 Offers same appearance in open and closed positions.

- .3 Modification of ventilation unit:
 - .1 Provide a stainless steel plate on the inside, 304 grade, 355mm high by a length equal to the width of each window, pre-perforated with a solid contour as indicated on plans, attached with spacers at each ventilation unit using inaccessible milled screws, hidden behind existing steel-concrete bars.
 - .2 A conical handle shall be integrated into the stainless steel plate as indicated on plans.
 - .3 Include an opening mechanism for the operable portion of the window that cannot be detached by infinitely turning.
 - .4 The 180° handle, in one direction or the other, should open or close ventilation unit, depending on its starting position.
 - .5 The handle and the mechanism should be securely and solidly installed to the ventilation unit and to the perforated steel plate and should be located as per plans, to enable easy and continuous operation of the ventilation unit.
- .4 Finish/colour: Anodized bronze #40.
- .5 Sections shall be in 6063 T45 alloy and quenched.
- .6 Folded aluminum sections shall be fabricated from quenched aluminum alloy in function of their use and finish.
- .7 Fasteners shall be in stainless steel, finish 316, and shall be appropriately dimensioned with an adequate quantity to fulfill their intended use.

2.4 MATERIALS

- .1 Aluminum (frame and component elements):
 - .1 Standard material: ASTM B 221: in 6063-T6 alloy and quenched.
- .2 Thickness of frame walls: Each frame piece shall have a structural resistance satisfying performance specification requirements.
- .3 Tolerances: The mentioned tolerance dimensions for wall thicknesses and other cross sections of aluminum window frame elements are nominal dimensions and comply with the aluminum standards and data of the Aluminum Association (AA).

2.5 ACCESSORIES

- .1 Fastenings, when exposed, shall be in stainless steel.
- .2 Molding: replace extruded EPDM (ethylene-propylene terpolymer) molding strips with a structural sealant product.
 - .1 See related section 07 92 10 -Joints sealing.
- .3 Perimeter anchor devices: Aluminum. Where steel anchor devices are used, provide insulation to be placed between steel and aluminum materials to prevent unwanted galvanic action.
- .4 Separating strips shall be provided to prevent electrolytic action between metals:
 - .1 High-density double-sided adhesive strips. See Section 07 92 10 – Joint Sealing.
 - .2 Ruban d'appui en néoprène haute densité, autocollant sur deux (2) faces, entre les barreaux et les cadres de fenêtres (côté intérieur).
- .5 Glazing stops: One (1) above each frame, aluminum, adapted to frames:
 - .1 Fasten each glazing stop with 38mm stainless steel tamper resistant security screws.
 - .2 Install two screws per glazing stop.

- .3 Acceptable products: submit specifications sheet and product sample to Departmental Representative for approval.
- .6 Decorative plates:
 - .1 En aluminium de même type et de même épaisseur que les cadres de fenêtres, aux endroits et de dimensions tel qu'indiqués aux plans.
 - .2 Prévoir fixations dissimulées.
 - .3 Finishes : see paragraph 2.8.

2.6 RELATED MATERIALS

- .1 Sealant: Refer to joints section 07 92 10 – Joint Sealing.
- .2 Glass: Refer to section 08 80 50 – Glazing.
- .3 Transition Sheet, see section 07 19 00 – Water Repellents.
- .4 Stainless steel drip edge and ledge, refer to section 05 50 00 – Metal fabrications.

2.7 FABRICATION

- .1 General
 - .1 Construct components according to manufacturer's instructions and with a minimum compensation space the length of the assembly perimeter, to allow for installation and movement of perimeter sealant.
 - .2 Assemble corners and joints with precision. Joints shall be flush, capillary and weather tight
 - .3 Prepare components for anchor installation. Fabricate anchors.
 - .4 Conduct Work so that fastenings and attachments are not visible.
 - .5 Components shall be installed with stainless steel security frames, as detailed on plans.

2.8 FINISHES

- .1 Colored anodic coating; architectural category I conforming to AA-M12C22A42/A44 standard, dark bronze color.

2.9 SUPPLIER QUALITY CONTROL

- .1 Supplier quality: specified aluminum windows shall be provided by same manufacturer.
- .2 Production tolerances: fabricate aluminum windows in compliance with manufacturer-specified tolerances for frame elements.

PART 3 - EXECUTION

3.1 INSPECTION

- .1 Assure that substrate conditions (existing or repaired prefabricated concrete panels) are acceptable for installation in accordance with manufacturer instructions. Assure that openings are suitable for the aluminum window systems and that the sill plate is level, in accordance with manufacturer's specified tolerances.
 - .2 Assure existing conditions using field measurements prior to fabrication. Indicate taken measurements on shop drawings. Coordinate measurement on site and the fabrication schedule with the Work calendar to avoid construction delays.
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3.2 INSTALLATION

- .1 General notes: Install frame system in accordance with manufacturer's instructions and entries in the AAMA manual. .
 - .1 Incompatible materials: protect aluminum materials from sources of corrosion or from electrolytic action caused by coming into contact with other elements.
 - .2 Assembly weather tightness: Apply a sealant layer, a joint or weather moulding on principal and auxiliary elements so as to assure weather tightness of the assembly.
 - .3 Attach to the structural frame in order to respect construction tolerances and other irregularities.
 - .4 Place fasteners and shims in order to guarantee the system's continued stability with building structure.
 - .5 Set the system level, square, plumb and aligned to avoid warping or deformation. Maintain assembly tolerances in alignment with adjacent work.
- .2 Installation of ventilation units:
 - .1 Modify ventilation units according to plans.
 - .2 Install **modified ventilation units** inside the aluminum frame system in order to prevent the water drip from each unit from hindering pressure plate installation.
 - .3 The installation of **modified ventilation units** should hide all screws and fastening devices.
 - .4 Isoler le pourtour des unités de ventilation installées dans les cadres à l'aide d'un produit à l'uréthane à faible expansion et étancher avec boudin d'appui et scellant.
- .3 Sills installation and stainless steel drips:
 - .1 Coordinate installation of new drip edges and new allegations of stainless steel window frames with metal sub-contractor working.
 - .2 Install sills and drip on a bed of urethane and wedges to give a minimum slope of 2% for the outward flow of water.
 - .3 Provide two stainless steel screws by the amount of window frame.
 - .4 Install components on a bed of urethane sealant bead as indicated on plans.
 - .5 See Section 05 50 00 - Metal Fabrications.
- .4 Related product installation requirements:
 - .1 Sealants: Refer to section 07 92 00 – Joint Sealants.
 - .2 Glass: Refer to section 08 80 50 – Glazing.
 - .3 Stainless steel Drip edges and ledges: Refer to section 05 50 00 – Metal Fabrications.

3.3 CAULKING

- .1 Gaps surrounding exterior window frames shall be filled with low-expansion urethane foam, in accordance with Section 07 21 29.03 – Sprayed Insulation – Polyurethane Foam.
- .2 Caulk joints window frame and other framing elements in accordance with Section 07 92 10 – Joint Sealing, in order to assure impermeability to outside environmental conditions and to the infiltration of air and water vapor on the inside.
- .3 Caulking shall be conducted to prevent permeability of window perimeters. All necessary corrections, even following the completion of Work, shall be conducted at the expense of the Contractor.

3.4 ADJUSTMENTS

- .1 Assure the correct functional of all components upon installation completion.
 - .2 Adjust opening mechanisms for each window to guarantee ease of use.
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3.5 PROTECTION AND CLEANING

- .1 Protection: Protect finishes and exposed surfaces of installed products against possible harm during the course of construction. Protect aluminum shop front systems from damage caused by grinding and polishing, plasterwork, lime, acids and cement, or any other noxious element.
- .2 Cleaning: Repair or replace installed products that have been damaged. Clean the installed products according to manufacturer's instruction prior to acceptance by Owner. Remove and dispose of construction debris in compliance with applicable laws.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 74 21 – Construction/Demolition Waste Management And Disposal.
- .2 Section 08 50 50 – Windows.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C 542-94(1999), Specification for Lock-Strip Gaskets.
 - .2 ASTM D 2240-97e1, Test Method for Rubber Property - Durometer Hardness.
 - .3 ASTM E 330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .2 Canadian Door and Window Manufacturers, Certification Program.
- .3 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.8-97, Insulating Glass Units.
- .4 Laminators Safety Glass Association, Standards Manual.

1.3 PERFORMANCE REQUIREMENTS

- .1 Provide continuity of building enclosure vapour and air barrier using glass and glazing materials as follow:
 - .1 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.
- .2 Size glass to withstand wind loads, dead loads and positive and negative live loads perpendicular to glass plane, to a design pressure as measured in accordance with ANSI/ASTM E330.
- .3 Limit glass deflection to 1/200 flexural limit of glass with full recovery of glazing materials.

1.4 SUBMITTALS

- .1 Submit shop drawing conforming to the requirements of Section 01 33 00 – Submittal Procedures.

1.5 MOCK-UPS

- .1 Submit required mock-ups in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit a full size mock-up of a sealed unit for each type of window, including weatherproofing products and accessories, to be included with aluminium window samples. See Section 08 50 00 – Windows
- .3 In an easily visible location on each of the mock-ups, affix a label indicating the names of the project, the product and that of the manufacturer.

1.6 GUARANTEE

- .1 For work relating to the present section, section 08 80 50 – Glazing, the guarantee period of 12 months is increased to ten (10) years.
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- .2 The Contractor's guarantee will cover any loss of air- and water-tightness of the enclosed space and all defects that could affect glazing clarity starting from the signing date of the Declaration of Substantial Performance.

- .3 Windows guarantee: see Section 08 50 00 – Windows.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Divert metal cut-offs from landfill by disposal at nearest metal recycling facility.
- .2 Divert uninstalled materials for reuse at nearest used building materials facility or similar type facility.
- .3 Divert unused caulking and sealant materials from landfill through disposal at special wastes depot.

1.8 PACKAGING MATERIALS

- .1 Remove from Work site all packing materials and divert them to nearest recycling facility.
- .2 Place all corrugated cardboard, polystyrene and plastic packing materials into appropriate recycling bins installed on the site, in accordance with site waste management program.

PART 2 - PRODUCTS

2.1 GLASS

- .1 V1: Insulating security glass units (V.T.T.): to CAN/CGSB-12.8, quadruple-pane, 25.4 mm finished thickness, having the following characteristics.
 - .1 Exterior panel composed of two (2) 4 mm panes dipped and laminated with a 1.52 mm PVB film.
 - .2 Inert gas fill: 6mm thick, filled with argon.
 - .3 Spacer: stainless steel.
 - .4 Inner panel composed of two (2) 4 mm panes dipped and laminated with a 1.52 mm PVB film.
 - .5 Glass coating: Low-E, Surface number 3.
 - .6 U Value: 0.353
 - .7 Visible light transmission: 43%.
 - .8 Total solar transmission: 29.7 %
 - .9 Solar heat gain coefficient: 0.448
- .2 V2: Spandrel panels glazing in windows type FB-15 (kitchens and bathrooms will stay in cell blocks: Glass is safety glass 10 mm thick heat treated and coloured.
 - .1 Acceptable products: - PRELGARD glass tinted Solar-type PRELCOAT Grey PC-9901.
 - .2 Other approved replacement products.

2.2 ACCESSORIES

- .1 Only products included on the list of approved products published by the Canadian General Standards Board (CGSB) are acceptable for prescribed Work.
- .2 Setting blocks: Neoprene 50 Shore A durometer hardness to ASTM D2240, width to suit glazing method, glass light weight, thickness and area.
- .3 Spacer shims: Neoprene 50 Shore A durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.
- .4 Glazing tape:
 - .1 Preformed butyl compound with integral resilient tube spacing device, 10-15 Shore A durometer hardness to ASTM D2240; coiled on release paper; 3 x 10 mm size; black colour.

- .5 Glazing splines: resilient industry standard neoprene or polyvinyl chloride, extruded shape to suit glazing channel retaining slot, appropriate for aluminium sections, colour chosen by the Ministerial Representative.
- .6 Glazing clips: manufacturer's standard type.
- .7 Lock-strip gaskets: to ASTM C 452.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verify that openings for glazing are correctly sized and within tolerance.
- .2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 PREPARATION

- .1 Clean contact surfaces with solvent and wipe dry.
- .2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- .3 Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

- .1 Exterior – Dry Method (Self-Adhesive Tape):
 - .1 Cut glazing tape to appropriate length to be place on permanent stops 5 mm above sight line. Install horizontal strips first and cover the entire width of the pane prior to applying vertical strips. Seal corners by butt-jointing self-adhesive tape and covering joints with sealing caulk.
 - .2 Place setting blocks at 1/4 points, with edge block maximum 150 mm from corners.
 - .3 Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
 - .4 Install removable stops without displacing glazing tape. Exert pressure for full continuous contact.
 - .5 Trim protruding tape edge.
- .2 Installation: Exterior – Joint Inserts
 - .1 Unwrap and spread over warm flat surface.
 - .2 Compress joint inserts into glazing profile, starting at corners and working towards the centre.
 - .3 Drain condensation through holes pierced in horizontal support mullion.
 - .4 Install joint inserts according to manufacturer's instructions.

3.4 CLEANING

- .1 Remove traces of primer, caulking.
- .2 Remove labels after work is complete.
- .3 All scratched, broken or damaged glass is to be immediately replaced at no additional cost to Canada.

3.5 PROTECTION OF FINISHED WORK

- .1 After installation, mark light with an "X" by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units.

3.6 GENERAL

- .1 Glass shall be precision cut to tolerances required for installation. Glass shall be installed as to be free of any superimposed load or other factor that could cause warping or bending that could affect appearance or lead to breaking. At locations where glass edges will be visible, they are to be straight, smooth, polished, and non cutting. Use only normal glass cutting methods. Glazing stops of openings to be glazed will be well-aligned and will ensure adequate fit of glazing within openings.
- .2 Plier marks required for tempering process will be made on surfaces that will be covered once installation is finished. No visible mark will be accepted.
- .3 Glass installation will be rigid once finished and shall be adjusted to fit various building all direct contact between glass and metal or wood shall be avoided. Any tape, strip, or other glazing accessories will be flush with the glazing stops or other similar accessories. Glazing stops will be removable to allow replacement of glass as required.
- .4 Each glass unit will be labelled with a removable label from the manufacturer identifying the manufacturer, glass type, and glass quality. Labels will only be removed upon Ministry Representative's written approval.

3.7 INSPECTION

- .1 Openings to be glazed will be correctly dimensioned and will respect allowable tolerances according to manufacturer's recommendations.
- .2 Set-back surfaces and surfaces of window frames will be clean, undamaged, and ready for installation of glazing.

3.8 QUALITY OF WORK

- .1 Remove protective coatings, clean contact surfaces with solvent, let dry.
- .2 Apply coat of primer/sealant to contact surfaces.
- .3 Place setting blocks as directed by manufacturer's instructions.
- .4 Rest glazing on setting blocks and push against tape or glazing product for full contact at perimeter of light or unit.
- .5 Install removable glazing stops without disturbing glazing tape or sealant and push for full contact at perimeter of light or unit.
- .6 Depending on glass type, leave space of at least 3 mm at edges.
- .7 Install spacer shims to centre glazing correctly in frame. Install shims at 600 mm on centre and set back 6 mm from sight line.
- .8 Where required, seal exterior of glazing as recommended by manufacturer.
- .9 Sealant will be installed in straight and level bead, flush with sight line and smoothed with appropriate tool or solvent wipe.
- .10 Do not cut or grind glass that has been tempered, heat-treated, or film-laminated.

END OF SECTION

PART 1 – GENERAL

This section covers the surface protection of rusted steel bars exist. A rustproofing treatment is required to preserve steel surfaces before installing windows.

1.1 RELATED REQUIREMENTS

- .1 Section 08 50 50 Windows.

1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC).
 - .1 Not applicable.
- .2 Green Seal Environmental Standards (GS).
 - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .4 The Master Painters Institute (MPI).
 - .1 Architectural Painting Specification Manual - current edition.
 - .2 Maintenance Repainting Manual - current edition.
- .5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards:
 - .1 SCAQMD Rule 1113-A2007, Architectural Coatings.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for paint and coating products and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate 200 x 300 mm sample panels of each paint stain, clear coating, special finish with specified paint or coating in colours, gloss/sheen and textures required to MPI Painting Specification Manual standards.
 - .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 - .5 Sustainable Design Submittals:
 - .1 Not applicable.
-

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Provide and maintain dry, temperature controlled, secure storage.
 - .2 Store painting materials and supplies away from heat generating devices.
 - .3 Store materials and equipment in well ventilated area within temperature as recommended by manufacturer.
- .4 Fire Safety Requirements:
 - .1 Supply one (1) 9 kg Type ABC fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada (NFC) requirements.
- .5 Develop Construction Waste Management Plan and Waste Reduction Workplan for Work of this Section.
- .6 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan and Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.5 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Ventilate enclosed spaces in accordance with Section 01 51 00 - Temporary Utilities.
 - .2 Co-ordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
 - .3 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Apply paint finishes when ambient air and substrate temperatures at location of installation can be satisfactorily maintained during application and drying process, within MPI and paint manufacturer's prescribed limits.
 - .2 Test concrete, masonry and plaster surfaces for alkalinity as required.
 - .3 Apply paint to adequately prepared surfaces, when moisture content is below paint manufacturer's prescribed limits.
- .3 Additional application requirements:
 - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
 - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Supply paint materials for paint systems from single manufacturer.
- .2 Conform to latest MPI requirements with respect to paint coatings, including surface preparation and application of primer or paint print.
- .3 Materials in accordance with MPI – Architectural Painting Specification Manual and MPI – Maintenance Repainting Manual “Approved Product” listing.
 - .1 Use MPI listed materials having E3 rating where indoor air quality requirements exist, with particular regard to odour.
- .4 Colours
 - .1 Not applicable.
- .5 Mixing and tinting
 - .1 Not applicable.
- .6 Gloss/sheen ratings
 - .1 Not applicable.
- .7 Exterior painting
 - .1 Metal exposed surfaces (existing steel bar protection):
 - .1 Product: 3 hands of heavy duty antirust, certified performance, colour grey.

PART 3- EXECUTION

3.1 GENERAL

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

3.2 EXAMINATION

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

3.3 PREPARATION

- .1 Protection of in-place conditions:
 - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.
 - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
-

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

3.4 APPLICATION

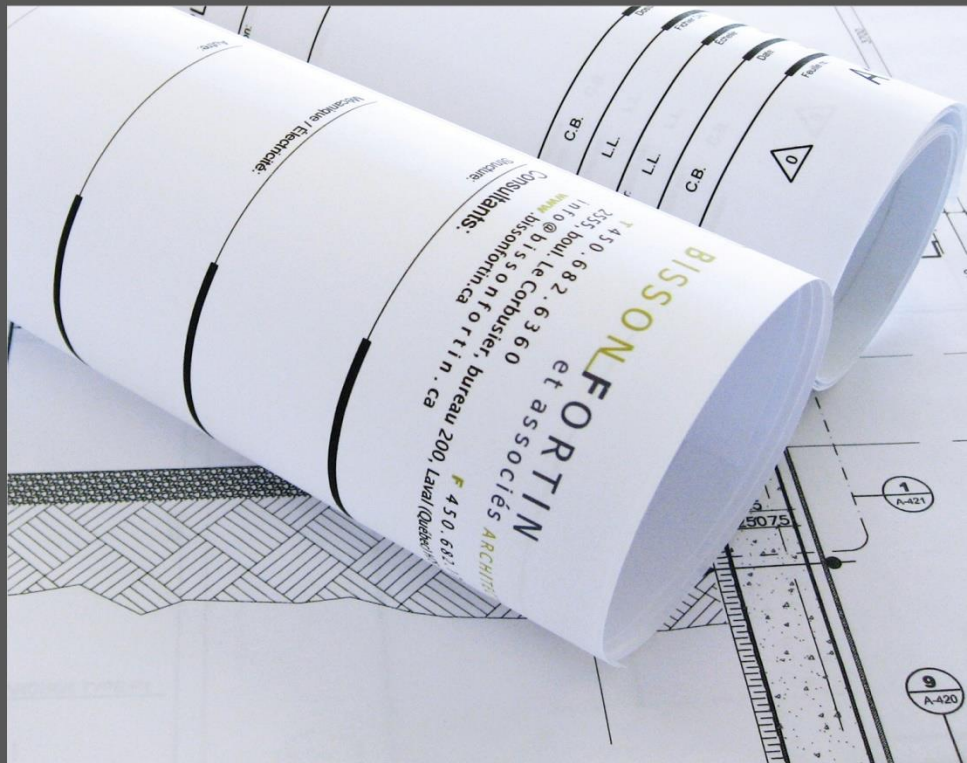
- .1 Paint only after prepared surfaces have been accepted by Departmental Representative
- .2 Use method of application approved by Departmental Representative.
 - .1 Conform to manufacturer's application recommendations.
- .3 Apply coats of paint in continuous film of uniform thickness.
 - .1 Repaint thin spots or bare areas before next coat of paint is applied.
- .4 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .5 Sand and dust between coats to remove visible defects.
- .6 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .7 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .8 Finish closets and alcoves as specified for adjoining rooms.
- .9 Finish top, bottom, edges and cut-outs of doors after fitting as specified for door surfaces.
- .10 Mechanical/Electrical Equipment:
 - .1 Paint conduits, piping, hangers, ductwork and other mechanical and electrical equipment exposed in finished areas, to match adjacent surfaces, except as indicated.

- .2 Do not paint over nameplates.
- .3 Keep sprinkler heads free of paint.
- .4 Paint fire protection piping red.
- .5 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .6 Paint natural gas piping yellow.
- .7 Paint both sides and edges of backboards for telephone and electrical equipment before installation.
 - .1 Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.5 CLEANING

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

END OF SECTION



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