

**WINDOW REPLACEMENT,
DRUMMOND INSTITUTION,
DRUMMONDVILLE (QUEBEC)**

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**TECHNICAL SPECIFICATIONS
ARCHITECTURE**

ISSUED FOR SR5 – Tender
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1 STAMPS AND SIGNATURES

1.1 - ARCHITECTURE

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END OF SECTION

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Important Notes :

- 1) This List of Sections indexes the required, but not necessarily limited to, works.
- 2) All references to Commission de la Santé et de la Sécurité du Travail (CSST) shall be substituted by Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)

END OF SECTION

ARCHITECTURE

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END OF SECTION

Part 1 General**1.1 SUMMARY**

The project consists primarily in replacing the fenestration of cell pavilions 4 to 9, as well as the replacement of secured glazing (interior and exterior) at perimeter of guard's stations of said cell pavilions 4 to 9. Some envelope modifications will have to be achieved - they are indicated on the drawings.

1.2 WORK BY OTHERS

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from the Departmental Representative.
- .2 Coordinate 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.

1.3 FUTURE WORK

- .1 Ensure that Work does not encroach on Construction zones of future phases.

1.4 WORK SEQUENCE

- .1 Execute the Works by phases, so that the Departmental Representative may occupy the premises in a continuous basis during the Works. The construction is scheduled to take place over the course of 8 weeks, such as 2 weeks per phase as shown on the drawings. Coordinate Progress Schedule with the occupancy during construction – phases have been planned so to create a suite of occupied Construction zones allowing continuity of circulation to cells' pavilions during the project's advancement.
- .2 Required stages:
 - .1 Phase A: Windows on North and East facades of pavilions 4 and 5, and on East facades of pavilions 6, 8 and 9.
 - .2 Phase B: Walls facing the central access path, on pavilions 4, 6, 5 and 7.
 - .3 Phase C: Walls facing South on pavilions 7 and 9.
 - .4 Phase D: Walls facing the central access path, on pavilions 6, 8 and 9.
- .3 Construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.

1.5 CONTRACTOR USE OF PREMISES

- .1 Not Used.
- .2 Limit use of premises for Work, for storage, and for access, to allow:
 - .1 The Departmental Representative occupancy.
 - .2 Partial occupancy of other buildings on site by the Departmental Representative.

- .3 Public usage.
 - .3 Coordinate 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.
- 1.6 OCCUPANCY BY THE DEPARTMENTAL REPRESENTATIVE**
 - .1 The Departmental Representative will occupy premises during entire construction period for execution of normal operations.
 - .2 Cooperate with the Departmental Representative in scheduling operations to minimize conflict and to facilitate the Departmental Representative usage.
- 1.7 PARTIAL OCCUPANCY BY THE DEPARTMENTAL REPRESENTATIVE**
 - .1 Not used.
- 1.8 PRE-ORDERED PRODUCTS**
 - .1 Not used.
- 1.9 PRE-PURCHASED EQUIPMENT**
 - .1 Not used.
- 1.10 EQUIPMENT SUPPLIED BY THE DEPARTMENTAL REPRESENTATIVE**
 - .1 Not used.
- 1.11 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDINGS**
 - .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 existing stairs in building for moving workers and material.
 - .1 Accept liability for damage, safety of equipment and overloading of existing equipment.

1.12 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 pedestrians, vehicular traffic and occupant 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 occupant systems.
- .7 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .8 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .9 Record locations of maintained, re-routed and abandoned service lines.
- .10 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.13 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 RELATED REQUIREMENTS**

- .1 Not used.

1.2 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.

1.3 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Departmental Representative will not assign sanitary facilities for use by Contractor's personnel. Contractor shall provide his own sanitary facilities and ensure their maintenance.
- .5 Use only building stairs to ensure the travel of personnel and materials.
- .6 Closures: protect work temporarily until permanent enclosures are completed.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

1.5 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 forty-eight (48) hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions to minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
- .3 Provide for pedestrian and vehicular traffic.
- .4 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.6 SPECIAL REQUIREMENTS

- .1 Work shall be executed from the outside of the building.
- .2 Work shall be executed from Monday to Thursday, between 07h00 a.m. and 05h30 p.m.
- .3 Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedule - Bar (GANTT) Chart.
- .4 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .5 Keep within limits of work and avenues of ingress and egress.
- .6 Contractor's vehicles shall be parked outside of the compound.

1.7 SECURITY

- .1 Where security has been reduced by Work of Contract, provide temporary means to maintain security.
- .2 Security clearances:
 - .1 Personnel employed on this project will be subject to security check. Obtain clearance, as instructed, for each individual who will require entering premises.
 - .2 Obtain requisite clearance, as instructed, for each individual required to enter premises.
 - .3 Personnel will be checked daily at start of work shift and provided with pass which must be worn at all times. Pass must be returned at end of work shift and personnel checked out.
 - .4 Contractor's personnel will require satisfactory Correctional Services Canada initiated security screening in order to complete Work in premises and on site.
 - .5 See Section 01 35 13 (Project Security Requirements) and its Annex (Security Clearance Form).
- .3 Security escort:
 - .1 Personnel employed on this project must be escorted when executing work in non-public areas during normal working hours. Personnel must be escorted in all areas after normal working hours.
 - .2 Submit an escort request to Departmental Representative at least fourteen (14) days before service is needed. For requests submitted within time noted above, costs of security escort will be paid for by Departmental Representative. Cost incurred by late request will be Contractor's responsibility.
 - .3 Any escort request may be cancelled free of charge if notification of cancellation is given at least four (4) hours before scheduled time of escort. Cost incurred by late request will be Contractor's responsibility.
 - .4 Calculation of costs will be based on average hourly rate of security officer for minimum of eight (8) hours per day for late service request and of four (4) hours for late cancellations.

1.8 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not permitted.

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

- .1 Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative.
- .2 The Departmental Representative will prepare the agenda for meetings.
- .3 The Departmental Representative will distribute written notice of each meeting four days in advance of meeting date .
- .4 The Departmental Representative will provide physical space and make arrangements for meetings.
- .5 The Departmental Representative will preside at meetings.
- .6 The Departmental Representative will record the meeting minutes, which will include significant proceedings and decisions and identify actions by parties.
- .7 The Departmental Representative will reproduce and distribute copies of minutes within five days after meetings and transmit to meeting participants and, affected parties not in attendance.
- .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.3 PRECONSTRUCTION MEETING

- .1 Within fifteen (15) days after award of Contract, the Departmental Representative will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Other than the Departmental Representative, Contractor and major Subcontractors will be in attendance.
- .3 The Departmental Representative will establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
- .4 The Departmental Representative will incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.

- .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
- .5 Delivery schedule of specified equipment in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
- .6 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
- .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .8 Departmental Representative provided products.
- .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.

1.4 PROGRESS MEETINGS

- .1 In collaboration with the Contractor, During course of Work and two (2) weeks prior to project completion, the Departmental Representative will schedule progress meetings every two weeks.
- .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .3 The Departmental Representative will notify parties minimum four (4) days prior to meetings.
- .4 The Departmental Representative will record minutes of meetings and circulate to attending parties and affected parties not in attendance within five (5) days after meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.

- .10 Maintenance of quality standards.
- .11 Review proposed changes for affect on construction schedule and on completion date.
- .12 Other business.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General**1.1 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 Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: overall system operated by 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 ten (10) working days, to

CONSTRUCTION PROGRESS SCHEDULE – BAR (GANTT) CHART

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.
- .2 Submit to Departmental Representative within 10 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of acceptance of Master Plan.

1.5 MASTER PLAN

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

1.6 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Shop Drawings, Samples.
 - .3 Mobilization.
 - .4 Siding.
 - .5 Interior Architecture (Walls, Floors and Ceiling).
 - .6 Fire Systems.
 - .7 Testing and Commissioning.
 - .8 Supplied equipment long delivery items.
 - .9 Departmental Representative required dates.
 - .10 Commissioning of window equipment (for each phase).
 - .11 End of work date (for each phase).

1.7 PROJECT SCHEDULE REPORTING

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

1.8 PROJECT MEETINGS

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

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Part 3 Execution**3.1 NOT USED**

- .1 Not used.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

- .1 Not used.

1.3 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.

1.4 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 On this project, shop drawings of the proposed fenestration method are required along with tender submittal. Clearly identify spare parts to be provided at the end of the project, and report the total count (per part).

- .3 When required in specific specification sections, submit drawings stamped and signed by professional engineer registered or licensed in the Province of Quebec, Canada.
- .4 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.
- .5 Allow 10 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 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 (1) electronic copy and one (1) print of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .12 Submit one (1) electronic copy and one (1) print 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 one (1) electronic copy and one (1) print of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
- .14 Submit one (1) electronic copy and one (1) print 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 one (1) electronic copy and one (1) print of manufacturer's 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 one (1) electronic copy and one (1) print 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 one (1) electronic copy and one (1) print 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, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .22 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that the Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.5 SAMPLES

- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address.
- .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.

1.6 MOCK-UPS

- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control.
- .2 The Departmental Representative can, at any time, require samples of the work. If accepted, the samples can become part of the finished work.

1.7 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

- | | | | |
|---|-------------|----|---|
| 1 | Purpose | .1 | To ensure that both the construction project and the institutional operations may proceed without undue disruption or hindrance and that the security of the Institution is maintained at all times. |
| 2 | Definitions | .1 | "Contraband" means: <ul style="list-style-type: none">(a) An intoxicant, including alcoholic beverages, drugs and narcotics,(b) 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,(c) An explosive or a bomb or a component thereof,(d) Currency over any applicable prescribed limit of 25.00\$, and(e) Any item not described in paragraphs (a) to (d) that could jeopardize the security of a Penitentiary or the safety of persons, when that item is possessed without prior authorization |
| | | .2 | "Unauthorized Smoking Items" means all smoking items including, but not limited to, cigarettes, cigars, tobacco, chewing or snuffing tobacco, cigarette making machines, matches and lighters. |
| | | .3 | "Commercial Vehicle" means any motor vehicle used for the shipment of material, equipment and tools required for the construction project. |
| | | .4 | "CSC" means Correctional Service Canada. |
| | | .5 | "Director" means Director or Warden of the Institution as applicable or their representative. |
| | | .6 | "Construction employees" means persons working for the general contractor, the sub-contractors, equipment operators, material suppliers, testing and inspection companies and regulatory agencies. |
| | | .7 | "Departmental Representative" means the Public Services and Procurement Canada (PSPC) or the Correctional Service Canada (CSC) project manager depending on project. |
| | | .8 | "Perimeter" means the fenced or walled area of the institution that restrains the movement of the inmates. |
| | | .9 | "Construction zone" means the area as shown on the contract drawings where the contractor will be allowed to work. This area may or may not be isolated from the security area of the institution. See Phasing Plans (A001) for a better comprehension of the construction limits in object – in each case, the construction zone include a portion of the cell pavilions' elevations targeted (see A200-A201-A202), every time secured by temporary fences. When the Works imply the guard stations, these are divided up so to always allow, in parallel, proceeding of the institutional operations without interference (see 1.1 of this Section). |

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|---|-------------------------|---|
| 3 | Preliminary Proceedings | <ul style="list-style-type: none">.1 Prior to the commencement of work, the contractor shall meet with the Director to:<ul style="list-style-type: none">.1 Discuss the nature and extent of all activities involved in the Project..2 Establish mutually acceptable security procedures in accordance with this instruction and the institution's particular requirements..2 The contractor will:<ul style="list-style-type: none">.1 Ensure that all construction employees are aware of the CSC security requirements..2 Ensure that a copy of the CSC security requirements is always prominently on display at the job site..3 Cooperate with institutional personnel in ensuring that security requirements are observed by all construction employees. |
| 4 | Construction Employees | <ul style="list-style-type: none">.1 Submit to the Director a list of the names with date of birth of all construction employees to be employed on the construction site and a Security Clearance Form (see Annex) for each employee..2 Allow two (2) weeks, or ten (10) working days, for processing of security clearances. Employees will not be admitted to the Institution without a valid security clearance in place and a recent picture identification such as a provincial driver's license. Security clearances obtained from other CSC institutions are not valid at the institution where the project is taking place..3 The Director may require that facial photographs may be taken of construction employees and these photographs may be displayed at appropriate locations in the institution or in an electronic database for identification purposes. The Director may require that Photo ID cards be provided for all construction workers. ID cards will then be left at the designated entrance to be picked upon arrival at the institution and shall be displayed prominently on the construction employees clothing at all time while employees are at the institution. Verify how this institution wants this process to be carried out..4 Entry to Institutional Property will be refused to any person there may be reason to believe may be a security risk..5 Any person employed on the construction site will be subject to immediate removal from Institutional Property if they:<ul style="list-style-type: none">.1 appear to be under the influence of alcohol, drugs or narcotics..2 behave in an unusual or disorderly manner..3 are in possession of contraband. |
| 5 | Vehicles | <ul style="list-style-type: none">.1 The director may limit at any time the number and type of vehicles allowed within the Institution. Unless directed otherwise, all vehicles are required to park outside the secure perimeter of the Institution. See |

Site Plan with Access Info (A000).

- | | | | |
|---|------------|-----|--|
| | | .2 | All unattended vehicles on CSC property shall have windows closed; doors and trunks shall be locked and keys removed. The keys shall be securely in the possession of the owner or an employee of the company that owns the vehicle. Institution may require lockable gas caps on all vehicles and motorized equipment. |
| | | .3 | Drivers of delivery vehicles for material required by the project shall require security clearances and must remain with their vehicle the entire time that the vehicle is in the Institution. The director may require that these vehicles be escorted by Institutional staff or Commissionaires while in the Institution. |
| | | .4. | Given the Director permits a trailer to be left inside the secure perimeter of the Institution, these trailer doors will be locked at all times. All windows will be securely locked when left unoccupied. All trailer windows shall be covered with expanded metal mesh. All storage trailers inside and outside the perimeter must be locked when not in use. |
| 6 | Parking | .1 | The parking area(s) to be used by construction employees will be further designated by the Director. Parking in other locations will be prohibited and vehicles may be subject to removal. |
| 7 | Shipments | .1 | All shipments of project material, equipment and tools shall be addressed in the Contractor's name to avoid confusion with the institution's own shipments. The contractor must have his own employees on site to receive any deliveries or shipments. CSC staff will <u>NOT</u> accept receipt of deliveries or shipments of any material equipment or tools for the contractor. |
| 8 | Telephones | .1 | There will be no installation of telephones, Facsimile machines and computers with Internet connections permitted within the perimeter of the institution unless prior approval of the Director is received (see Annex). |
| | | .2 | The Director will ensure that approved telephones, Facsimile machine and computers with Internet connections are located where they are not accessible to inmates. All computers will have an approved password protection that will stop an Internet connection to unauthorized personnel. |
| | | .3 | Wireless cellular and digital telephones, including but not limited to devices for telephone messaging, pagers, BlackBerries, telephone used as 2-way radios, are not permitted within the perimeter of the Institution unless approved by the Director (see Annex). If wireless cellular telephones are permitted, the user will not permit their use by any inmate. |
| | | .4. | The Director may approve (see Annex) but limit the use of two way radios, but place restrictions on their use such as "not in inmate areas". |
| 9 | Work Hours | .1 | Work hours within the Institution are: Monday to Thursday 07:00 a.m. to 05:30 p.m. |

- .2 Work will not be permitted during weekends and statutory holidays without the permission of the Director. A minimum of ten (10) days advance notice will be required to obtain the required permission. In case of emergencies or other special circumstances, this advance notice may be waived by the Director.
- 10 Overtime Work
 - .1 No overtime work will be allowed without permission of the Director. Give a minimum forty-eight (48) hours advance notice when overtime work on the construction project is necessary and approved. If overtime work is required because of an emergency such the completion of a concrete pour or work to make the construction safe and secure, the contractor shall advise the Director as soon as this condition is known and follow the directions given by the Director. Costs to Canada for such events may be attributed to the contractor.
 - .2 When overtime work, weekend statutory holiday work is required and approved by the Director, extra staff members may be posted by the Director or his designate, to maintain the security surveillance. The actual cost of this extra staff may be attributed to the contractor.
- 11 Tools and Equipment
 - .1 Maintain on site a complete list of all tools and equipment to be used during the construction project. Make this inventory available for inspection when required. Verify with the institution to obtain a list of non-authorized/restricted tools or equipment that are prohibited for this project.
 - .2 Throughout the construction project maintain an up-to-date list of tools and equipment specified above.
 - .3 Keep all tools and equipment under constant supervision, particularly power-driven and cartridge-driven tools, cartridges, files, saw blades, rod saws, wire, rope, ladders and any sort of jacking device.
 - .4 Store all tools and equipment in approved secure locations. Some institutions require the daily removal of tools and equipment such as when working on an occupied range.
 - .5 Lock all tool boxes when not in use. Keys to remain in the possession of the employees of the contractor.
 - .6 Scaffolding shall be secured and locked when not erected and when erected, shall be secured in a manner agreed upon with the director.
 - .7 All missing or lost tools or equipment shall be reported immediately to the Director.
 - .8 The Director will ensure that the security staff members carry out checks of the Contractor's tools and equipment against the list provided by the Contractor. These checks may be carried out at the following intervals:
 - .1 At the beginning and conclusion of every construction project.
 - .2 Weekly, when the construction project extends longer than a one week period.
 - .9 Certain tools/equipment such as cartridges and hacksaw blades are highly controlled items. The contractor will be given at the beginning of

the day, a quantity that will permit one day's work. Used blades/cartridges will be returned to the Director's representative at the end of each day. Check with institution for their exact procedure for controlled items.

- .10 If propane or natural gas is used for heating the construction, the institution will require that an employee of the contractor supervise the construction site during non-working hours. This is especially a concern if the construction site is close to inmate living units and a fire could endanger human life. Check with institution for their policy.

12 Keys

.1 Security Hardware Keys

- .1 The Contractor shall arrange with the security hardware supplier/installer to have the keys for the security hardware to be delivered directly to Institution, specifically the Security Maintenance Officer (SMO).
- .2 The SMO will provide a receipt to the Contractor for security hardware keys.
- .3 The contractor will provide a copy of the above-mentioned receipt to the Departmental Representative.

.2 Other Keys

- .1 The contractor will use standard construction cylinders for locks for his use during the construction period.
- .2 The contractor will issue instructions to his employees and sub-trades, as necessary, to ensure safe custody of the construction set of keys.
- .3 Upon completion of each phase of the construction, the CSC representative will, in conjunction with the lock manufacturer:
 - .1 Prepare an operational keying schedule;
 - .2 accept the operational keys and cylinders directly from the lock manufacturer;
 - .3 Arrange for removal and return of the construction cores and install the operational core in all locks.
- .4 Upon putting operational security keys into use, the CSC construction escort shall obtain these keys as they are required from the SMO and open doors as required by the Contractor. The Contractor shall issue instructions to his employees advising them that all security keys shall always remain with the CSC construction escort.

- 13 Security Hardware .1 Turn over all removed security hardware to the Director of the Institution for disposal or for safekeeping until required for re-installation.

- 14 Prescription Drugs .1 Employees of the contractor who are required to take prescription drugs during the workday shall obtain approval of the Director to bring a one day supply only into the Institution.

- 15 Smoking .1 Contractors and construction employees are not permitted to smoke

	Restrictions		inside correctional facilities or outdoors within the perimeter of a correctional facility and must not possess unauthorized smoking items within the perimeter of a correctional facility.
		.2	Contractors and construction employees who are in violation of this policy will be requested to immediately cease smoking or dispose of any unauthorized smoking items and, if they persist, will be directed to leave the institution.
		.3	Smoking is only permitted outside the perimeter of a correctional facility in an area to be designated by the Director.
16	Contraband	.1	Weapons, ammunition, explosives, alcoholic beverages, drugs and narcotics are prohibited on institutional property.
		.2	Note that cameras are also not allowed on CSC property.
		.3	Verify with the institution to obtain a list of non-authorized / restricted tools or equipment that are prohibited for this project.
		.4	The discovery of contraband on the construction site and the identification of the person(s) responsible for the contraband shall be reported immediately to the Director.
		.5	Contractors should be vigilant with both their staff and the staff of their sub-contractors and suppliers that the discovery of contraband may result in cancellation of the security clearance of the affected employee. Serious infractions may result in the removal of the company from the Institution for the duration of the construction.
		.6	Presence of arms and ammunition in vehicles of contractors, sub-contractors and suppliers or employees of these will result in the immediate cancellation of security clearances for the driver of the vehicle.
17	Searches	.1	All vehicles and persons entering institutional property may be subject to search.
		.2	When the Director suspects, on reasonable grounds, that an employee of the Contractor is in possession of contraband or unauthorized items, he may order that person to be searched.
		.3	All employees entering the Institution may be subject to screening of personal effects for traces of contraband drug residue.
18	Access to and Removal from Institutional Property	.1	Construction personnel and commercial vehicles will not be admitted to the institution after normal working hours, unless approved by the Director.
19	Movement of Vehicles	.1	Escorted commercial vehicles will be allowed to enter or leave the institution through the vehicle access gate during the following hours: <ul style="list-style-type: none"> .1 from 12h00 p.m. to 12:30 p.m. .2 from 05h00 p.m. to 06:00 p.m. Construction vehicles shall not leave the Institution until an inmate count is completed.
		.2	The contractor shall advise the Director twenty-four (24) hours in

advance to the arrival on the site of heavy equipment such as concrete trucks, cranes, etc.

- .3 Vehicles being loaded with soil or other debris, or any vehicle considered impossible to search, must be under continuous supervision by CSC staff or Commissionaires working under the authority of the Director.
- .4 Commercial vehicles will only be allowed access to institutional property when their contents are certified by the Contractor or his representative as being strictly necessary to the execution of the construction project.
- .5 Vehicles shall be refused access to institutional property if, in the opinion of the Director, they contain any article which may jeopardize the security of the institution.
- .6 Private vehicles of construction employees will not be allowed within the security perimeter of medium or maximum security institutions without the authorization of the Director. This Institution is of medium security level.
- .7. With prior approval of the Director, a vehicle may be used in the morning and evening to transport a group of employees to the work site. This vehicle will not remain within the Institution the remainder of the day. Check with institution for their policy concerning private vehicles for transporting employees.
- .8. With the approval of the Director, certain equipment may be permitted to remain on the construction site overnight or over the weekend. This equipment must be securely locked, with the battery removed. The Director may require that the equipment be secured with a chain and padlock to another fixed object.

20 Movement of
construction
employees on
Institutional Property

- .1 Subject to the requirements of good security, the Director will permit the Contractor and his employees as much freedom of action and movement as is possible.
- .2 However, notwithstanding paragraph above, the Director may:
 - .1 Prohibit or restrict access to any part of the institution.
 - .2 Require that in certain areas of the institution, either during the entire construction project or at certain intervals, construction employees only be allowed access when escorted by a member of the CSC security staff or a commissionaire.
- .3 During the lunch and coffee/health breaks, all construction employees will remain within the construction site. Construction employees are not permitted to eat in the officer's lounge or the dining room of the institution.

21 Surveillance and
Inspection

- .1 Construction activities and all related movement of personnel and vehicles will be subject to surveillance and inspection by CSC security staff members to ensure that established security requirements are met.
- .2 CSC staff members will ensure that an understanding of the need to

22	Stoppage of Work	.1	<p>The director may order at any time that the contractor, his employees, sub-contractors and their employees to not enter or to leave the work site immediately due to a security situation occurring within the Institution. The contractor's site supervisor shall note the name of the CSC staff member giving this instruction, the time of the request and obey the order as quickly as possible.</p> <p>The contractor shall advise the Departmental Representative of this interruption of the work within twenty-four (24) hours.</p>
23	Contact with Inmates	.1.	<p>Unless specifically authorized, it is forbidden to come into contact with inmates, to talk with them, to receive objects from them or to give them objects. Any construction employee doing any of the above will be removed from the site and his security clearance revoked. When applicable, check with institution for their regulations concerning inmate contact when in a situation of inmate labour.</p>
		.2	<p>It is to be noted that cameras are not allowed on CSC property. See article 16 of this Section.</p>
		.3	<p>Notwithstanding the above paragraph, if the director approves of the usage of cameras, it is strictly forbidden to take pictures of inmates, of CSC staff members or of any part of the Institution other than those required as part of this contract.</p>
24	Completion of Construction Project	.1	<p>Upon completion of the construction project or, when applicable, the takeover of a facility, the Contractor shall remove all remaining construction material, tools and equipment that are not specified to remain in the Institution as part of the construction contract.</p>

END OF SECTION



**INSTITUTIONAL ACCESS
CPIC CLEARANCE REQUEST**

**ACCÈS À UN ÉTABLISSEMENT
DEMANDE DE VÉRIFICATION
DU DOSSIER AU CIPC**

PUT AWAY ON FILE – CLASSER AU DOSSIER
ADMINISTRATIVE OR OPERATIONAL FILE
DOSSIER ADMINISTRATIF OU OPÉRATIONNEL

► Original = 3170-12

► PLEASE PRINT INFORMATION CLEARLY - VEUILLEZ ÉCRIRE EN LETTRES MOULÉES

Institution – Établissement	Request received Demande reçue le	Date (YYAA-MM-DJ)	PUT AWAY ON FILE CLASSER AU DOSSIER	► 3170-12
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A. PERSONAL INFORMATION – RENSEIGNEMENTS PERSONNELS

Surname Nom de famille	Full name (no nicknames or initials) Nom au complet (pas de surnoms ou d'initiales)	Maiden name (if applicable) Nom de jeune fille (s'il y a lieu)	
Date of birth Date de naissance (YYAA-MM-DJ)	Place of birth – Lieu de naissance City/Town – Ville ou municipalité	Province/State – Province ou état	Country – Pays

B. PHYSICAL DESCRIPTION – DESCRIPTION PHYSIQUE

<input type="checkbox"/> Male Homme	<input type="checkbox"/> Female Femme	Height – Grandeur	Weight – Poids	Eye color – Couleur des yeux	Hair color Couleur des cheveux
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C. ADDRESS – ADRESSE

Street – Rue	City/Town – Ville ou municipalité	Province	Postal Code - Code postal	Telephone number – Numéro de téléphone	
				Home – Domicile	Work – Bureau
Representing (name of company/organization) – Représente (nom de la compagnie ou de l'organisation)					

D. GENERAL INFORMATION – RENSEIGNEMENTS GÉNÉRAUX

1. Have you ever been convicted of a criminal offence for which you have not been granted a pardon, or an offence for which you have been granted a pardon and such a pardon has been revoked? Avez-vous déjà été reconnu coupable d'une infraction criminelle pour laquelle on ne vous a pas octroyé un pardon ou d'une infraction pour laquelle on vous a octroyé un pardon qui a été révoqué?	<input type="checkbox"/> Yes Oui	<input type="checkbox"/> No Non
2. Do you personally know of any person incarcerated in a correctional facility? Connaissez-vous personnellement une personne qui est incarcérée dans un établissement correctionnel?	<input type="checkbox"/> Yes Oui	<input type="checkbox"/> No Non
3. Do you have any reason to believe coming into contact with this person could pose a risk to your or their personal safety? Avez-vous des raisons de croire que le fait d'entrer en contact avec cette personne pourrait présenter un risque pour votre sécurité personnelle ou la sienne ?	<input type="checkbox"/> Yes Oui	<input type="checkbox"/> No Non
4. Are you related/associated to an inmate or on an inmate's visiting list? Êtes-vous apparenté ou associé à un détenu ou inscrit sur la liste des visiteurs d'un détenu?	<input type="checkbox"/> Yes Oui	<input type="checkbox"/> No Non

If you have answered YES to any of the above, please explain below. – Si vous avez répondu OUI à une des questions ci-dessus, veuillez fournir une explication ci-après.

E. SIGNATURE (When sections A to E are filled out completely, please return the completed form to the institution for approval.)

(Une fois que les sections A à E ont été remplies, veuillez retourner le formulaire dûment rempli à l'établissement aux fins d'approbation.)

In making this application, I hereby give the Correctional Service of Canada my consent to use the information provided on this form to conduct such inquiries with police authorities as may be necessary to ascertain my suitability. Finally, I acknowledge that the Correctional Service of Canada has no responsibility for any harm that may come to me in the course of my activities, except where such harm is a direct result of negligence on the part of an employee(s) of the Service.

NOTE: Access may be denied for submitting false information. Passes may be issued for those receiving clearance and approval.

En soumettant la présente demande, j'autorise le Service correctionnel du Canada à se servir des renseignements fournis dans le formulaire afin de mener, auprès des services de police, toute enquête jugée nécessaire pour vérifier mon admissibilité. Par ailleurs, je conviens que le Service correctionnel du Canada ne peut être tenu responsable d'un préjudice subi dans le cadre de mes activités sauf si ce préjudice est directement attribuable à la négligence d'un ou de plusieurs employés du Service.

NOTA : Tout demandeur qui fournit de faux renseignements peut se voir refuser l'accès à l'établissement. Un laissez-passez peut être émis aux demandeurs dont la demande d'accès est approuvée.

Applicant's signature – Signature du demandeur

Date (YYAA-MM-DJ)

F. FOR OFFICE USE ONLY – RÉSERVÉ AU SCC

Reason for clearance – Motif justifiant la demande d'accès

Main d'œuvre ouvrière et experts-conseil nécessaire à la réalisation de travaux de construction.

Department making the request (please print) Unité qui soumet la demande (en lettres moulées s.v.p.)	Signature of Division Head Signature du chef de la division	Date (YYAA-MM-DJ)
Services techniques régionaux		
<input type="checkbox"/> No criminal record Aucun casier	<input type="checkbox"/> A possible criminal record #: Numéro du casier judiciaire	Last entry: Dernière entrée :
<input type="checkbox"/> An outstanding warrant/charge held by: Auteur du mandat non exécuté/accusation en instance :		

SIGNATURES

The individual has been advised. – Le demandeur a été informé de la décision.

<input type="checkbox"/> Approved Approuvée	<input type="checkbox"/> Not approved Non approuvée	<input type="checkbox"/> Yes Oui	<input type="checkbox"/> No Non	By: Par :	
Security Intelligence Officer Agent de renseignements de sécurité	Date (YYAA-MM-DJ)	Institutional Head Directeur de l'établissement	Date (YYAA-MM-DJ)	Visit Review Board Comité des visites	Date (YYAA-MM-DJ)



ELECTRONIC ITEM REGISTRY
AND AUTHORIZATION

REGISTRE ET AUTORISATION DES
APPAREILS ÉLECTRONIQUES

PUT AWAY ON FILE
CLASSER AU DOSSIER

Original = 3280-8

Official Visitor Name (print) Nom du visiteur officiel (en lettres moulées)		Date (YYAA-MM-DJ)
Name of Institution – Nom de l'établissement	Period of Authorization : Durée de l'autorisation :	<input type="checkbox"/> One time only – Une fois seulement <input type="checkbox"/> From – De To – À

TYPE OF ELECTRONIC DEVICE – TYPE D'APPAREIL ÉLECTRONIQUE

Cell Phone Téléphone cellulaire	Make – Marque :	
	Cell phone # – N° de téléphone cellulaire :	()
	Device serial number – N° de série de l'appareil :	
	Other – Autre :	
BlackBerry Appareil BlackBerry	Make – Marque :	
	Cell phone # – N° de téléphone cellulaire :	()
	Device serial number – N° de série de l'appareil :	
	Other – Autre :	
Tablet Tablette électronique	Make – Marque :	
	Cell phone # – N° de téléphone cellulaire :	()
	Device serial number – N° de série de l'appareil :	
	Other – Autre :	
E-Reader Lecteur de livres numériques	Make – Marque :	
	Cell phone # – N° de téléphone cellulaire :	()
	Device serial number – N° de série de l'appareil :	
	Other – Autre :	
Laptop Ordinateur portatif	Make – Marque :	
	Cell phone # – N° de téléphone cellulaire :	()
	Device serial number – N° de série de l'appareil :	
	Other – Autre :	
Other Device Autre appareil	Make – Marque :	
	Cell phone # – N° de téléphone cellulaire :	()
	Device serial number – N° de série de l'appareil :	
	Other – Autre :	

I understand that the use of electronic item(s) is related to official duties, i.e. medical purposes/other use as authorized by the Institutional Head or delegate and that inmates are **not** to have access to it.
Je comprends que l'utilisation de ces appareils électroniques est liée à mes fonctions officielles, c.-à-d. à des fins médicales/autres utilisations autorisées par le directeur de l'établissement ou son délégué et que les détenus ne peuvent **pas** y avoir accès.

I, _____, hereby agree to abide by the above and understand that immediate notification is required in the event that the device goes missing.
Official Visitor's Signature

Je, _____, par la présente, m'engage à respecter ce qui est énoncé précédemment et à signaler immédiatement la disparition de ces appareils, s'il y a lieu.
Signature du visiteur officiel

AUTHORIZATION – AUTORISATION

Institutional Head Name (print) Nom du Directeur de l'établissement (en lettres moulées)	Signature	Date (YYAA-MM-DJ)
CSC/SCC 1467 (R-2014-05) (Word Version – Version Word)	Information may be accessible or protected as required under the provisions of the <i>Access to Information Act</i> and the <i>Privacy Act</i> . Les renseignements peuvent être accessibles ou protégés selon ce que prescrit la <i>Loi sur l'accès à l'information</i> et la <i>Loi sur la protection des renseignements personnels</i> .	DISTRIBUTION Copy – Copie 1 = RHO Security – Sécurité à l'AR Copy – Copie 2 = SIO – ARS Copy – Copie 3 = AWO – DAO Copy – Copie 4 = Infopoint

Part 1 General**1.1 SECTION INCLUDES**

- .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)
- .4 Act Respecting Occupational Health and Safety, R.S.Q. Chapter S-2.1.
- .5 Construction Safety Code, S-2.1, r.4.

1.3 SUBMITTALS

- .1 Submit the documents required according to section 01 33 00 – Submittal procedures.
- .2 Submit to Departmental Representative, the CNESST and the Association paritaire en santé et sécurité du secteur de la construction (ASP Construction) 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.
- .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.
- .5 For use of equipment for lifting persons or materials, ensure that the inspections required by the standards are met and be able to provide a copy of certificates of inspection upon request of Departmental Representative.

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.4).

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 Presence of inmates in proximity of construction site.

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.4).
- .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.

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 the 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 As of start of 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 on site.
- .3 Provide this person with the authority, resources and tools needed for performance of his/her duties.
- .4 The person selected shall meet the following requirements:
 - .1 Accredited by the CNESST.
- .5 The person selected shall:
 - .1 have in-depth knowledge of legislation and regulations applicable to the site pertaining to life and safety.
 - .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 week.
- .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 Non applicable

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 LOCKOUT

- .1 For every work on energized equipment or equipment that may be started accidentally, the Contractor shall draw up and implement a lockout procedure and complete the Request for Electrical Isolation Form provided by the Manager in Charge of Worksite.

Although the hereunder list is not exhaustive, here are some examples for which the use of the form is obligatory:

- 1) main building power feeders
 - 2) feeder supply panels and sub-panels
 - 3) bus ducts
 - 4) motor control centres
 - 5) emergency power circuits
 - 6) fire alarm and fire protection equipment
 - 7) mechanical protective equipment
 - 8) alarm circuit for building services, including all heating, ventilating and air conditioning equipment
 - 9) circuits supplying more than one (1) piece of equipment
 - 10) circuits affecting one (1) single piece of equipment used in a cooling or heating system.
- .2 Notwithstanding the previous paragraphs, the Contractor shall, in emergency situation, receive an oral guarantee of isolation of the Manager in Charge of Worksite and immediately countersign the request of electrical isolation.
- .3 The procedure requested at paragraph 1 must comply with the principles listed in the "Le cadenassage" pamphlet published by the Association paritaire pour la santé et la sécurité du travail secteur construction (ASP Construction).
- .4 Supervisors and all workers concerned must have followed ASP Construction's "Les techniques de cadenassage" course (514 355-6190 or 1 800 361-2061) or an equivalent course given by another firm.
- .5 Identify every work that must absolutely be done on live equipment and establish the safety measures that will be applied, including the personal protective equipment and complete a work permit for live equipment.

1.17 WORK IN HEIGHT

.1 GENERAL

- .1 The Contractor must ensure that any person carrying out work that poses a risk of falling more than 2,4 m use fall protection equipment.
- .2 Plan and organize work so as to eliminate the danger at source or ensure collective protection, thereby minimizing the use of personal protective equipment. When personal fall protection is required, workers must use a safety harness that complies with CSA standard CAN/CSA Z-259.10 M90. A safety belt must not be used as fall protection.
- .3 Every person using an elevating platform must have a training regarding this equipment.
- .4 Wearing of safety harness is obligatory in any elevating platform with telescopic, articulated or rotary boom.
- .5 Delimit a danger zone in any place where equipment for work in height is used.
- .6 Everyone who works within 3 meters from the edge of a roof must use a safety harness in accordance with the regulation, unless there is presence of a

guardrail on the perimeter of the roof which is between 900 mm to 1100 mm high.

.2 SPECIAL REQUIREMENTS – SCAFFOLDING

.1 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.

.2 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.

.3 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).

.4 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.

.5 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.
- .6 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.
- .7 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.
- .8 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.

1.18 LIFTING MATERIAL

- .1 Lifting devices shall be positioned in such a way that loads are not carried over workers, occupants or the public.
- .2 The Contractor must transmit to Engineer a work procedure, signed and sealed by an engineer, including inter alia the position of the crane, a sketch of the trajectory of the transported loads, the length of the mast and a plan of lifting for the handling of loads above occupied buildings. Engineer can, if judge necessary, impose work of evening and weekend.
- .3 All mobile cranes manufactured after January 1st 1980 must be equipped with a safety device against overload.
- .4 All mobile cranes with cables manufactured after January 1st 1970, except if they are used for other end than lifting loads, must be provided with a safety device against two-blocking. Regarding mobile cranes with cables manufactured before January 1st 1970, they will have to be equipped with the device at the latest on December 31st 2006.
- .5 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.

- .6 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 load bearing capacity, the amount, weight and location of counterweight and any other detail that may affect the capacity and stability of the device.
- .7 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.
- .8 The entire lifting area shall be closed off to prevent non-authorized people from entering it.
- .9 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.
- .10 The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed or scrapped.
- .11 Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.

1.19 SILICA SECTION

Preventive measures to apply to the work site

1. Source reduction methods

- 1.1. Work in wet environment or use tools with inflow of water in order to reduce dustiness, if not, collect dust at the source and retain it with a high efficiency filter not to propagate dust in the environment.
- 1.2. Clean surfaces and tools with water, never with compressed air.
- 1.3. Sand and pickle surfaces by using an abrasive containing less than 1 % of silica (also called amorphous silica).
- 1.4. When required, install shields or other containment device to prevent silica dust from migrating toward other workers or the public.

2. Individual protection equipments

- 2.1. Wear individual respiratory protection equipments (mask) during all the operations that could generate silica dust. Select respiratory protection in accordance with the « *Guide des appareils de protection respiratoire utilisés au Québec* »
http://www.prot.resp.csst.qc.ca/Guid_APR.pdf
- 2.2. Wear an ocular protection (glasses or visors).
- 2.3. Wear a coveralls to prevent contamination outside the worksite.

3. Personal hygiene

3.1. Do not eat, drink, or smoke in a dusty environment.

3.2. Wash the hands and the face before drinking, eating or smoking.

1.20 SPECIFIC CONDITIONS FOR ROOFING WORK

.1 FALL PROTECTION

.1 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.

.2 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.

.3 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).

.4 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).

.2 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.
- .3 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.
- .4 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.

.5 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.

.6 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*.

1.21 HOT WORK**.1 General**

- .1 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.
- .2 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.. See Annex 01 35 29.06 Hot Works Permit.
- .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 one hour 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 one hour 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.

.2 Welding and cutting

- .1 Note : For welding and cutting activities, make sure that the following conditions are met moreover that the ones mentioned above.
- .2 The works must be carried out in accordance with the sections “3.13 Compressed gas supply” and “3.14 Welding and cutting” of the Safety Code for the construction industry, S-2.1, r. 6.
- .3 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.

1.22 SPECIFIC CONDITIONS FOR CONFINED SPACES

Class 1

Regarding all class 1 (low-risk) confined spaces, all persons involved shall have followed a basic training. Though it is not necessary to implement special work practices in low-risk confined spaces, the Contractor shall implement methods that ensure the health and general safety of persons who must work in these spaces.

Before having access to confined spaces, the manager responsible for the workplace shall be informed of the expected date and time of entry and exit.

Persons who have access to low-risk confined spaces must record the relevant information in the Confined Space Entry Log (ELF 103 form), ie, all persons entering this class of confined space shall record each entry and each exit. See Annex 01 35 29.06 Confined Space Entry Log.

Class 2 and 3

Regarding all class 2 and 3 confined spaces (medium- and high-risk), the following measures shall be strictly applied.

1. The Contractor's prevention program shall include a written procedure which identifies:
 - Necessary work tools;
 - Instruments, installed or to be installed in the confined space, and measures to take for their installation, use, maintenance, protection and moving;
 - Pipes and conduits entering the confined space;
 - Risks and security measures to be taken depending on the work to be carried out;
 - Hazardous material that may be found in the confined space;
 - Appropriate rescue methods and equipment as well as emergency plan.
2. The Contractor shall complete an access permit (ELF 101 form). The permit shall be valid for the duration of a work shift and shall take into account information contained in the assessment report and special conditions related to the work to be carried out. The Contractor may use his own form if it provides all the information that appears on the appended form. See Annex 01 35 29.06 Confined Space Entry Permit.
3. The Contractor shall complete a Hot Work Permit when the work to be carried out includes operations such as welding, cutting or any other activity that creates flames or sparks (ELF form 102).
4. All persons having access to the confined space and the safety guard shall have the following training certificates:
 - Safety for work in PWGSC confined spaces (ASP Construction or equivalent training)
 - Workplace First Aid and CPR (organization recognized by the CNESST)
 - Use of ventilating equipment (ASP Construction or equivalent training)
 - Use of safety harness (ASP Construction or equivalent training)
 - Use and maintenance of respiratory protection equipment (ASP Construction or equivalent training)
 - Gas detection equipment (ASP Construction or equivalent training)
 - When the use of air adduction adduction respirators or autonomous respirators is planned for, thorough training in the preparation, maintenance and use of such equipment (Manufacturer, supplier or recognized organization).

- In remote areas where no local rescue and emergency intervention unit is available, the Contractor shall designate persons who are capable of carrying out rescue operations in confined spaces. First-aid attendant designated by the Contractor shall have relevant training in the use of rescue equipment.
5. All persons who must use air adduction respirators or autonomous respirators shall present a medical certificate confirming that they are fit to use this kind of equipment. This certificate shall be valid for two years.
 6. Employees who are required to work in sewage collection systems or other similar systems shall be immunized against infectious diseases, in compliance with the immunization program prescribed by Health Canada, which is, against diphtheria and tetanus and for work to be done at the Correctional Service Canada, against hepatitis « B » .
 7. The antidiphtheria-tetanus vaccination is strongly recommended, though it is not mandatory.
 8. The Contractor shall establish emergency and rescue procedures in co-operation with municipal and ambulance services. These procedures, together with the relevant phone numbers and the whereabouts of the nearest phone shall be conspicuously posted near the work station.
 9. Before entry into a confined space, and every 15 minutes thereafter, the Contractor shall take readings of oxygen concentration, flammable gases and all toxic gases likely to be present, carbon monoxide and hydrogen sulphide in particular. These readings shall be recorded in a register, unless the detecting devices are equipped with an alarm and operate on a continuous basis. Detecting devices that are used shall be calibrated and adjusted by a competent person according to the manufacturer's directives, so that the alarms comply with the limits set out on the permit. NOTE: for welding and cutting tasks, readings of concentration must be done on a continuous basis.
 10. The Contractor is responsible for the provision and maintenance of gas detecting devices. The Engineer may at any time require the Contractor's equipment to be checked for accuracy by a qualified person. In the event of failure of a detecting device, work shall be suspended immediately and all workers shall leave the confined space. In these circumstances, no claim for time lost shall be accepted.
 11. If a detecting device alarm is set off, all workers shall leave the confined space. The Contractor shall then find the source of contamination, neutralize it, ventilate the confined space to eliminate contaminant residues and authorize access to the confined space only when concentrations of oxygen and gas have returned to normal.
 12. Compressed gas cylinders or welding equipment shall not be brought into confined spaces: this equipment shall remain outside and shall not block entrances or exits; all cylinders shall be properly secured.
 13. Tools and electrical devices used to gain access to confined spaces shall be grounded and, when necessary, designed to be explosion-proof. All equipment must be connected to a ground fault interrupter outlet or to a step-down transformer. The Contractor shall, at his own cost, hire a qualified electrician to adjust power receptacles and/or circuit breakers that he intends to use which do not meet these criteria.
 14. The Contractor shall provide a ventilation system to keep concentrations of contaminants below admissible limits.
 15. The Contractor shall put up posters to prevent unauthorized persons from entering the confined space.

16. When it is impossible to maintain the noise level under 85 dB, the Contractor shall provide all workers with ear protection adapted to the desired level of attenuation and work to be carried out.
17. The Contractor shall ensure that all workers wear the required personal protection equipment.
18. The Contractor shall assign a competent person to assume the function of safety guard. The safety guard shall:
 - Be properly informed of work procedures in a confined space.
 - Ensure constant communication with all workers in the confined space. The instructions that are applied shall be adapted to confined spaces. The Contractor shall choose means of communication according to identified risks and other relevant factors, that is the protection equipment the workers must wear, noise levels in confined spaces and surrounding areas, remoteness, lighting conditions, etc.
 - Be familiar with gas detecting devices and see to their proper functioning for the duration of the work.
 - Be familiar with auxiliary ventilation systems and see to their proper functioning for the duration of the work.
 - Be familiar with emergency procedures.
 - Ensure that:
 - All workers who enter the confined space respect the Contractor's work procedure.
 - The working conditions and the environment inside the confined space are in no way detrimental to workers' health and safety.
19. The safety guard shall, at all times, be posted at the entrance of the confined space and shall not leave his station as long as there is a worker inside the confined space.
20. The Contractor shall designate a person to be in charge of the safety of the confined space. This person shall be present at all times on the job site.
21. The same person may act as a security guard and be responsible for the safety of confined spaces, provided all requirements of both functions are met.

END OF SECTION



Travaux publics et Services
gouvernementaux Canada

Site supervisor - Superviseur du site	Telephone number - Numéro de téléphone
---------------------------------------	--

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R.068777.010

01 35 29.06 Annex
CONFINED SPACE ENTRY PERMIT



CONFINED SPACE ENTRY PERMIT PERMIS D'ACCÈS AUX ESPACES CLOS

Permit no.
N° du permis

Valid for eight (8) hours only.
Ce permis est valable pendant huit (8) heures seulement.

Issue date and time Date et heure d'émission	Expiry date and time Date et heure d'expiration		
<input type="checkbox"/> Contractor Entrepreneur		<input type="checkbox"/> PWGSC Personnel Personnel de TPSGC	
Location - Lieu	Dept. - Min.	Confined space no. N° de l'espace clos	Confined space class Catégorie d'espace clos
Description of work to be completed - Description du travail à effectuer			

Yes Oui	N/A S.O.	HAZARDS OF THE CONFINED SPACE RISQUES PRÉSENTÉS PAR L'ESPACE CLOS
		Oxygen Hazard: < 19.5% or > 23.0% Manque d'oxygène : < 19.5% ou > 23.0%
		Flammables: > 10% of LEL - Specify Produits inflammables : 10% de la limite explosive inférieure - Précisez
		Toxic Chemicals: > TLV-TWA - Specify Produits chimiques toxiques : > valeur TLV-TWA - Précisez
		Mechanical Hazards: - Specify Risques mécaniques : - Précisez
		Electrical Hazards: - Specify Chocs électriques : - Précisez
		Physical Hazards: noise; vibration, light, lazer; x-ray; heat; cold; surfaces; engulfment - Specify Risques physiques : bruits; vibrations; lumière; laser; rayons X; chaleur; froid; surfaces; engouffrement - Précisez
		Others: - Specify Autres : - Précisez

Equipment required for CS Entry - Équipement requis pour entrer dans l'espace clos

<input type="checkbox"/> Respiratory/Air purifying protection Dispositif de protection des voies respiratoires et de purification de l'air	<input type="checkbox"/> Lifelines and Safety harnesses Câble de sauvetage et harnais de sécurité	<input type="checkbox"/> Lockouts Mécanismes de verrouillage	<input type="checkbox"/> Hearing protection Protecteurs auditifs
<input type="checkbox"/> _____	<input type="checkbox"/> Tripod Trépied	<input type="checkbox"/> Lighting units Dispositifs d'éclairage	<input type="checkbox"/> Head protection Casque protecteur
<input type="checkbox"/> _____	<input type="checkbox"/> Personal lift Dispositif de levage personnel	<input type="checkbox"/> Ventilation Équipement d'aération	<input type="checkbox"/> Hand protection Gants
<input type="checkbox"/> _____	<input type="checkbox"/> Tool box Coffre à outils	<input type="checkbox"/> Secure area (post and flag) Zone protégée (affichage et signalisation)	<input type="checkbox"/> Eye protection Protecteurs oculaires
<input type="checkbox"/> _____	<input type="checkbox"/> Rescue equipment Équipement de secours	<input type="checkbox"/> Fire extinguishers Extincteurs d'incendie	<input type="checkbox"/> Face protection Visière
<input type="checkbox"/> _____	<input type="checkbox"/> Ground force circuit interrupters Disjoncteur de fuite à la terre et interrupteur de circuit de fuite	<input type="checkbox"/> _____	

Person in charge - Personne responsable	Signature
Safety Watcher - Gardien	Signature
Entrants - Personnes qui entrent dans l'espace clos	

Local emergency/medical response teams - Équipes locales d'intervention médicale et d'urgence	Telephone nos. - N°s de téléphone

Authorization - Autorisation

The above information is complete and accurate. Information pertaining to hazards and equipment requirements has been extracted from the latest Hazard Assessment, dated _____

Tous les renseignements fournis ci-dessus sont complets et exacts. L'information relative aux risques et à l'équipement requis est fondée sur la dernière évaluation des risques en date du _____

Manager in Charge of Worksite or Supervisor
Gestionnaire responsable du lieu de travail ou le superviseur

Signature



CONFINED SPACE ENTRY PERMIT PERMIS D'ACCÈS AUX ESPACES CLOS

Permit no.
N° du permis

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Entry date Date d'entrée		Time Heure	
Anticipated exit - Sortie de prévue Date		Time Heure	
Location - Lieu		Dept. - Min.	Confined space no. N° de l'espace clos
Confined space class Catégorie d'espace clos			
Description of work to be completed - Description du travail à effectuer			

Yes Oui	N/A S.O.	HAZARDS OF THE CONFINED SPACE RISQUES PRÉSENTÉS PAR L'ESPACE CLOS
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		Toxic Chemicals: > TLV-TWA - Specify Produits chimiques toxiques : > valeur TLV-TWA - Précisez
		Mechanical Hazards: - Specify Risques mécaniques : - Précisez
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		Others: - Specify Autres : - Précisez

Equipment required for CS Entry - Équipement requis pour entrer dans l'espace clos

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<input type="checkbox"/> _____	<input type="checkbox"/> Tripod Trépied	<input type="checkbox"/> Lighting units Dispositifs d'éclairage	<input type="checkbox"/> Head protection Casque protecteur
<input type="checkbox"/> _____	<input type="checkbox"/> Personal lift Dispositif de levage personnel	<input type="checkbox"/> Ventilation Équipement d'aération	<input type="checkbox"/> Hand protection Gants
<input type="checkbox"/> _____	<input type="checkbox"/> Tool box Coffre à outils	<input type="checkbox"/> Secure area (post and flag) Zone protégée (affichage et signalisation)	<input type="checkbox"/> Eye protection Protecteurs oculaires
<input type="checkbox"/> _____	<input type="checkbox"/> Rescue equipment Équipement de secours	<input type="checkbox"/> Fire extinguishers Extincteurs d'incendie	<input type="checkbox"/> Face protection Visière
<input type="checkbox"/> _____	<input type="checkbox"/> Ground force circuit interrupters Disjoncteur de fuite à la terre et interrupteur de circuit de fuite	<input type="checkbox"/> _____	

Person in charge - Personne responsable	Signature
Safety Watcher - Gardien	Signature
Entrants - Personnes qui entrent dans l'espace clos	

Local emergency/medical response teams - Équipes locales d'intervention médicale et d'urgence	Telephone nos. - N°s de téléphone

Authorization - Autorisation

I certify that all of the above information is complete and accurate and that all participants have been briefed on the work to be completed.
Je certifie que tous les renseignements susmentionnés sont complets et exacts et que tous les participants ont reçu les instructions relatives au travail à effectuer.

Person in Charge - Personne responsable

Signature

☐ Contractor
Entrepreneur

☐ PWGSC Personnel
Personnel de TPSGC

CONFINED SPACE ENTRY PERMIT - PERMIS D'ACCÈS À UN ESPACE CLOS

Yes Oui	N/A S.O.	CONFINED SPACE ENTRY CHECKLIST LISTE DE CONTRÔLE POUR EN ESPACE CLOS
		All participants have valid certification for this Confined Space Entry. Participants formés pour entrer dans un espace clos.
		All participants have been briefed on all potential hazards. Participants au courant des risques potentiels.
		All departments have been informed of potential service interruption. Tous les ministères ont été informés de la possibilité d'une interruption de service.
		All hazard sources have been isolated, blanked or blocked with locks and tags. Sources de danger isolées, obturées ou verrouillées et étiquetées.
		All energy sources have been locked out and tagged. Sources d'alimentation verrouillées et étiquetées.
		All potential ignition sources have been eliminated. Sources d'inflammation potentielles éliminées.
		All tools and equipment have been checked and found to be in good repair. Outils et équipement vérifiés et jugés en bon état.
		The opening for entry into and exit from the Confined Space is sufficient to allow safe passage of a person using protection equipment. L'ouverture prévue pour entrer dans l'espace clos ou pour en sortir est assez grande pour laisser passer une personne munie d'un équipement de protection.
		Confined Space has been drained, washed and purged of all potential hazards. Espace clos vidé, lavé et ne présentant plus aucun danger potentiel.
		Ventilation provides for a good fresh air supply. L'aération permet un bon approvisionnement en air frais.
		All appropriate emergency equipment is readily available. (First Aid Kit, Extinguisher, etc.) Équipement d'urgence facilement accessible (trousse de premiers soins, extincteurs, etc.)
		All required atmospheric testing has been completed and recorded. Qualité de l'air évaluée et résultats enregistrés.
		All additional permits have been acquired. (Hot Work, etc.) Permis additionnels (pour travail à chaud, par ex.) délivrés.
		Area has been secured for entrants and public. Secteur surveillé et isolé.
		The Emergency Response Team have been alerted to the CS Entry. Équipe des mesures d'urgence avisée d'une entrée dans un espace clos.
		Safety Watcher has been briefed. Gardien mis au courant et posté.

Person in Charge - Personne responsable

Signature



CONFINED SPACE ENTRY PERMIT PERMIS D'ACCÈS AUX ESPACES CLOS

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N° du permis

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Issue date and time Date et heure d'émission		Expiry date and time Date et heure d'expiration	
Entry date Date d'entrée	▶	Time Heure	▶
Anticipated exit - Sortie de prévue	▶	Time Heure	▶
Location - Lieu	Dept. - Min.	Confined space no. N° de l'espace clos	Confined space class Catégorie d'espace clos
Description of work to be completed - Description du travail à effectuer			

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		Others: - Specify Autres : - Précisez

Equipment required for CS Entry - Équipement requis pour entrer dans l'espace clos

<input type="checkbox"/> Respiratory/Air purifying protection Dispositif de protection des voies respiratoires et de purification de l'air	<input type="checkbox"/> Lifelines and Safety harnesses Câble de sauvetage et harnais de sécurité	<input type="checkbox"/> Lockouts Mécanismes de verrouillage	<input type="checkbox"/> Hearing protection Protecteurs auditifs
<input type="checkbox"/> _____	<input type="checkbox"/> Tripod Trépied	<input type="checkbox"/> Lighting units Dispositifs d'éclairage	<input type="checkbox"/> Head protection Casque protecteur
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<input type="checkbox"/> _____	<input type="checkbox"/> Rescue equipment Équipement de secours	<input type="checkbox"/> Fire extinguishers Extincteurs d'incendie	<input type="checkbox"/> Face protection Visière
<input type="checkbox"/> _____	<input type="checkbox"/> Ground force circuit interrupters Disjoncteur de fuite à la terre et interrupteur de circuit de fuite	<input type="checkbox"/> _____	

Person in charge - Personne responsable	Signature
Safety Watcher - Gardien	Signature
Entrants - Personnes qui entrent dans l'espace clos	

Local emergency/medical response teams - Équipes locales d'intervention médicale et d'urgence	Telephone nos. - N°s de téléphone

Authorization - Autorisation

I certify that all of the above information is complete and accurate and that all participants have been briefed on the work to be completed.
Je certifie que tous les renseignements susmentionnés sont complets et exacts et que tous les participants ont reçu les instructions relatives au travail à effectuer.

Person in Charge - Personne responsable

Signature

☐ Contractor
Entrepreneur

☐ PWGSC Personnel
Personnel de TPSGC

ATMOSPHERIC MONITORING - ÉVALUATION DE L'AIR

Test	Allowable limits Limites permises	Initial results Résultats préliminaires	Results - Résultats		Results - Résultats		Final results Résultats définitifs
			AM PM	Matin Après-midi	AM PM	Matin Après-midi	
Oxygen Oxygène	> 19.5% < 23%						
Flammability Inflammation	10% LEL						
H ₂ S	10 ppm						
CO	25 ppm						
Temperature Température	°C						

Entry date Date d'entrée	▶	Time Heure	▶
Exit date Date de sortie	▶	Time Heure	▶
Area secured - Secteur surveillé Date	▶	Time Heure	▶
Person in Charge - Personne responsable		Signature	

Atmospheric Monitoring conducted by - Évaluation de l'air menée par

Device - Appareil	Calibration date - Date d'étalonnage	Calibrated by - Étalonner par
Name - Nom		Title - Titre
Signature		Telephone number - Numéro de téléphone

NOTE: A hard copy, or machine readable version, of this permit must be maintained for a period of two (2) years after the date initializing the permit or for ten (10) years if any portion of the verification procedures were not complied with.

NOTA : Une copie à lire, ou une version lisible par machine, de ce permis doit être conservée pendant deux (2) ans après la date d'émission ou pendant dix (10) ans si les procédures de vérification n'ont pas été suivies.

R.068777.010

01 35 29.06 Annex
HOT WORK PERMIT



HOT WORK PERMIT

BUILDING:

BEFORE INITIATING HOT WORK, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE AN APPROPRIATE FIRE EXTINGUISHER IS READILY AVAILABLE!

This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: welding, brazing, cutting, grinding, soldering.

1. Company doing Hot Work: Post the permit at the Hot Work Location. After Hot Work, indicate time completed and leave permit posted for Fire Watch.		Required Precautions Checklist	
2. Fire Watch: Prior to leaving area, do final inspection and sign the permit at the security office.		<input type="checkbox"/> Available sprinklers, hose streams and extinguishers are in service/operable.	
<input type="checkbox"/> Employee <input type="checkbox"/> Contractor		<input type="checkbox"/> Hot Work equipment in good repair (PWGSC equipment ONLY).	
Hot Work Done by (Company)		Requirement within 35 ft. (11M) of Work	
Date		<input type="checkbox"/> Flammable liquids, dust, lint and oily deposits removed.	
Job Number		<input type="checkbox"/> Explosive atmosphere in area eliminated.	
Location/Building and Floor		<input type="checkbox"/> Floors swept clean.	
Nature of Job		<input type="checkbox"/> Combustible floors wet down, covered with fire resistive sheets.	
Person in Charge		<input type="checkbox"/> Remove other combustibles where possible. Otherwise protect with fire resistive tarpaulins or metal shields.	
Signature		<input type="checkbox"/> All wall and floor openings covered.	
I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.		<input type="checkbox"/> Fire resistive tarpaulins suspended beneath work.	
PFM Authorization		Work on Walls or Ceilings	
Signature		<input type="checkbox"/> Construction is noncombustible and without combustible covering or insulation.	
Date Permit Issued		<input type="checkbox"/> Combustibles on other side of walls moved away.	
Time Permit Issued		Work on Equipment	
Date Permit Expires		<input type="checkbox"/> Enclosed equipment cleaned of all combustibles.	
Time Permit Expires		<input type="checkbox"/> Containers purged of flammable liquids/vapours.	
Fire Watch Signoff		<input type="checkbox"/> Pressurized vessels, piping and equipment removed from service, isolated and vented.	
Work area and all adjacent areas to which sparks and heat might have spread were inspected during the fire watch period and were found fire safe.		Fire Watch/Hot Work Area Monitoring	
Signed: _____		<input type="checkbox"/> Fire watch will be provided during and for 60 minutes after work, including any break activity.	
Fire Watch Signoff		<input type="checkbox"/> Fire watch is supplied with suitable extinguisher(s).	
Work area was monitored for 1 hour following Hot Work and found fire safe.		<input type="checkbox"/> Fire watch is trained in use of this equipment and in sounding alarm.	
Signed: _____		<input type="checkbox"/> Fire watch may be required for adjoining areas, above and below.	
NOTE:		<input type="checkbox"/> Monitor hot work area for an additional three (3) hours after the 60 minutes.	
All fire incidents are to be reported immediately by using one of the following methods:		Other Precautions Taken	
1. Activating the nearest fire alarm station.		<input type="checkbox"/> Confined space entry permit required.	
2. Calling the fire department (or 911 where applicable).		<input type="checkbox"/> Area is protected with heat detector.	
3. Notifying the immediate supervisor or the security.		<input type="checkbox"/> Ample ventilation to remove smoke/vapour from work area.	
		<input type="checkbox"/> Additional ventilation required.	
		<input type="checkbox"/> Welding screen required.	
		<input type="checkbox"/> Special Procedures required.	
		<input type="checkbox"/> Lockout/tagout required.	
		<input type="checkbox"/> Fire extinguisher required.	
		<input type="checkbox"/> Welding Procedure required.	
		<input type="checkbox"/> Welding Procedure attached.	
		<input type="checkbox"/> Level 1 Confined Space Entry Procedures	
		<input type="checkbox"/> Other (specify):	



HOT WORK PERMIT

BUILDING:

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2. Fire Watch: Prior to leaving area, do final inspection and sign the permit at the security office.		<input type="checkbox"/> Available sprinklers, hose streams and extinguishers are in service/operable.	
<input type="checkbox"/> Employee <input type="checkbox"/> Contractor		<input type="checkbox"/> Hot Work equipment in good repair (PWGSC equipment ONLY).	
Hot Work Done by (Company)		Requirement within 35 ft. (11M) of Work	
Date		<input type="checkbox"/> Flammable liquids, dust, lint and oily deposits removed.	
Job Number		<input type="checkbox"/> Explosive atmosphere in area eliminated.	
Location/Building and Floor		<input type="checkbox"/> Floors swept clean.	
Nature of Job		<input type="checkbox"/> Combustible floors wet down, covered with fire resistive sheets.	
Person in Charge		<input type="checkbox"/> Remove other combustibles where possible. Otherwise protect with fire resistive tarpaulins or metal shields.	
Signature		<input type="checkbox"/> All wall and floor openings covered.	
I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.		<input type="checkbox"/> Fire resistive tarpaulins suspended beneath work.	
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		<input type="checkbox"/> Welding Procedure attached.	
		<input type="checkbox"/> Level 1 Confined Space Entry Procedures	
		<input type="checkbox"/> Other (specify):	



HOT WORK PERMIT

BUILDING:

BEFORE INITIATING HOT WORK, ENSURE PRECAUTIONS ARE IN PLACE!
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Time Permit Issued		Work on Equipment	
Date Permit Expires		<input type="checkbox"/> Enclosed equipment cleaned of all combustibles.	
Time Permit Expires		<input type="checkbox"/> Containers purged of flammable liquids/vapours.	
Fire Watch Signoff		<input type="checkbox"/> Pressurized vessels, piping and equipment removed from service, isolated and vented.	
Work area and all adjacent areas to which sparks and heat might have spread were inspected during the fire watch period and were found fire safe.		Fire Watch/Hot Work Area Monitoring	
Signed: _____		<input type="checkbox"/> Fire watch will be provided during and for 60 minutes after work, including any break activity.	
Fire Watch Signoff		<input type="checkbox"/> Fire watch is supplied with suitable extinguisher(s).	
Work area was monitored for 1 hour following Hot Work and found fire safe.		<input type="checkbox"/> Fire watch is trained in use of this equipment and in sounding alarm.	
Signed: _____		<input type="checkbox"/> Fire watch may be required for adjoining areas, above and below.	
NOTE:		<input type="checkbox"/> Monitor Hot Work Area for an additional three (3) hours after the 60 minutes.	
All fire incidents are to be reported immediately by using one of the following methods:		Other Precautions Taken	
1. Activating the nearest fire alarm station.		<input type="checkbox"/> Confined space entry permit required.	
2. Calling the fire department (or 911 where applicable).		<input type="checkbox"/> Area is protected with heat detector.	
3. Notifying the immediate supervisor or the security.		<input type="checkbox"/> Ample ventilation to remove smoke/vapour from work area.	
		<input type="checkbox"/> Additional ventilation required.	
		<input type="checkbox"/> Welding screen required.	
		<input type="checkbox"/> Special Procedures required.	
		<input type="checkbox"/> Lockout/tagout required.	
		<input type="checkbox"/> Fire extinguisher required.	
		<input type="checkbox"/> Welding Procedure required.	
		<input type="checkbox"/> Welding Procedure attached.	
		<input type="checkbox"/> Level 1 Confined Space Entry Procedures	
		<input type="checkbox"/> Other (specify):	

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

- .1 Definitions:
 - .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
 - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.
- .2 Reference Standards:
 - .1 U.S. Environmental Protection Agency (EPA)/Office of Water
 - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative.
- .3 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .4 Address topics at level of detail commensurate with environmental issue and required construction task[s].
- .5 Include in Environmental Protection Plan:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations and EPA 832/R-92-005, Chapter 3.

- .6 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
 - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
- .8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.
 - .1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .9 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .13 Waste Water Management Plan identifying methods and procedures for management or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

1.4 FIRES

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

1.5 DRAINAGE

- .1 Develop and submit erosion and Sediment Control Plan (ESC) identifying type and location of erosion and sediment controls provided. Plan to include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations, EPA 832/R-92-005, Chapter 3 .
- .2 Storm Water Pollution Prevention Plan (SWPPP) to be substituted for erosion and sediment control plan.
- .3 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .4 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.

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

1.6 SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties as indicated.
- .2 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m minimum.
- .3 Protect roots of designated trees to drip line during excavation and site grading to prevent disturbance or damage.
 - .1 Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas indicated by Departmental Representative.

1.7 WORK ADJACENT TO WATERWAYS

- .1 Not used.

1.8 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
 - .1 Provide temporary enclosures where indicated directed by Departmental Representative.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.9 HISTORICAL/ARCHAEOLOGICAL CONTROL

- .1 Not used.

1.10 NOTIFICATION

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

- .1 Take action only after receipt of written approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution**3.1 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Bury rubbish and waste materials on site where directed after receipt of written approval from Departmental Representative.
- .3 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .5 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

Part 1 General**1.1 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.

1.2 HAZARDOUS MATERIAL DISCOVERY

- .1 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.
- .2 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Departmental Representative.
- .3 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

1.3 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 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. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.2 INDEPENDENT INSPECTION AGENCIES

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

1.3 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.

1.4 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.

1.5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.6 REPORTS

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

1.7 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.

1.8 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 Mock-ups may remain as part of Work.

- .8 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

1.9 MILL TESTS

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

1.10 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 REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

- .1 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.3 ACTION AND INFORMATIONAL 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 Non applicable

1.6 WATER SUPPLY

- .1 The Contractor will provide continuous supply of potable water for construction use and to his workers. No water supply will be provided by the Departmental representative.
- .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 When propane or natural gas is used as heating fuel, Contractor shall conduct daily inspection of heating appliances, including statutory holidays, vacation days and weekends. These appliances must be equipped with a device to halt fuel feed automatically when burner stops.
- .4 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.
- .5 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.
- .6 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.
 - .5 Ventilate temporary sanitary facilities.
 - .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .7 Permanent heating system of building, to be used when available and if approved in writing by the Departmental Representative. Be responsible for damage to heating system if use is permitted. Use of permanent heating system, prior to its substantial performance, will have no impact on the warranty requirements as noted in specifications.
- .8 Return in initial state any portion of heating system used during construction before date of Certificate of Substantial Performance as specified in Division 23. Replace all filters.
- .9 Ensure Date of Substantial Performance and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by Departmental Representative.
- .10 Pay costs for maintaining temporary heat, when using permanent heating system. Departmental Representative will pay utility charges when temporary heat source is existing building equipment
- .11 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.
- .12 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.8 TEMPORARY POWER AND LIGHT

- .1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools.
- .2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.
- .3 Temporary power for electric cranes and other equipment is responsibility of Contractor.
- .4 Contractor to provide and maintain temporary lighting throughout project.

1.9 TEMPORARY COMMUNICATION FACILITIES

- .1 Provide and pay for temporary telephone and fax hook up, lines, internet and Wi-Fi necessary for own use.

1.10 FIRE PROTECTION

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by 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 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- .1 Not used.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Sans objet.

1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
 - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-0121-M1978(R2003), Douglas Fir Plywood.
 - .3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
 - .4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment..
- .3 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 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, swing staging , platforms and temporary stairs.

1.6 HOISTING

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

1.7 ELEVATORS

- .1 Not used.

1.8 SITE STORAGE/LOADING

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

1.9 CONSTRUCTION PARKING

- .1 Parking will not be permitted on the construction site.
- .2 Provide and maintain adequate access to project site.
- .3 Clean circulation paths where used by Contractor's equipment.

1.10 SECURITY

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

1.11 OFFICES

- .1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing lay down table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors to provide their own offices as necessary. Direct location of these offices.
- .4 Departmental Representative's Site office.
 - .1 Not used.

1.12 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.

1.13 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.
- .3 When permanent water and drain connections are completed, provide temporary water closets and urinals complete with temporary enclosures, inside building. Permanent facilities may be used on approval of Departmental Representative.

1.14 CONSTRUCTION SIGNAGE

- .1 Provide and erect project sign, within two weeks of signing Contract, in a location designated by Departmental Representative.
- .2 Construction sign 1.5 m x 2.5 m, of wood frame and plywood construction painted with exhibit lettering produced by a professional sign painter.
Indicate on sign, name of Owner, Consultant and Contractor, of design style established by Departmental Representative.
- .3 No other signs or advertisements, other than warning signs, are permitted on site.
 - .1
- .4 Locate project identification sign as directed by Departmental Representative and construct as follows:
 - .1 Paint surfaces of signboard and framing with one coat primer and two coats enamel. Colour white on signboard face, black on other surfaces.
 - .2 Apply vinyl sign face overlay to painted signboard face in accordance with installation instruction supplied.
- .5 Direct requests for approval to erect Consultant/Contractor signboard to Departmental Representative. For consideration general appearance of Consultant/Contractor signboard must conform to project identification site sign. Wording in both official languages.
- .6 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.
- .7 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.15 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 Construct access and haul roads necessary.
- .8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.
- .12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .13 Provide snow removal during period of Work.
- .14 Remove, upon completion of work, haul roads designated by Departmental Representative.

1.16 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****Part 3 Execution****3.1 NOT USED****END OF SECTION**

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

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

1.3 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 Where indicated on the plans, erect temporary site enclosures using 38 x 89 mm construction grade lumber framing at 600 mm centres and 1200 x 2400 x 13 mm exterior grade fir plywood to CSA O121.
- .2 Apply plywood panels vertically as indicated.
- .3 Provide lockable truck entrance gates and at least one pedestrian door as directed on the plans and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys.
- .4 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.
- .5 Paint public side of site enclosure in selected colours with one coat primer to CAN/CGSB 1.189 and one coat exterior paint to CGSB 1.59. Maintain public side of enclosure in clean condition.
- .6 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

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..
- .2 Provide as required by governing authorities.

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

1.8 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 Not used.

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 3 locations and installation schedule 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

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

- .1 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be borne 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 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.
- .3 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .5 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 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 Not used.

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 Be 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 Refer to Section 01 73 00 - Execution Requirements.
- .2 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.
- .3 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.12 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 Not used.
- .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

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

- .1 Owner's identification of existing survey control points and property limits.

1.3 QUALIFICATIONS OF SURVEYOR

- .1 Qualified registered land surveyor, licensed to practice in Place of Work, acceptable to Departmental Representative.

1.4 SURVEY REFERENCE POINTS

- .1 Not used.

1.5 SURVEY REQUIREMENTS

- .1 Not used.

1.6 EXISTING SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .2 Remove abandoned service lines within 2m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative.

1.7 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.8 RECORDS

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

1.9 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Not used.

1.10 SUBSURFACE CONDITIONS

- .1 Promptly notify Departmental Representative in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.
- .2 After prompt investigation, should Departmental Representative determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

Part 2 Products**2.1 NOT USED****Part 3 Execution****3.1 NOT USED**

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of 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 fire stopping material in accordance with Section 07 84 00 - Fire stopping, on entire thickness of penetrated element .
- .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 in accordance with Section 01 74 21 –Construction / Demolition Waste Management and Disposal.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not used.

1.2 REFERENCES

- .1 Not used.

1.3 PROJECT CLEANLINESS

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

1.4 FINAL CLEANING

- .1 Not used.
- .2 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

- .3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .4 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste products and debris other than that caused by Owner or other Contractors.
- .6 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.
- .7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .8 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.
- .9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors .
- .10 Clean lighting reflectors, lenses, and other lighting surfaces.
- .11 Vacuum clean and dust building interiors, behind grilles, louvers and screens.
- .12 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .13 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .14 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .15 Remove dirt and other disfiguration from exterior surfaces.
- .16 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .17 Sweep and wash clean paved areas.
- .18 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .19 Clean roofs, downspouts, and drainage systems.
- .20 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .21 Remove snow and ice from access to building.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials in accordance with Section 01 74 21 – Construction / Demolition Waste Management And Disposal.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General**1.1 WASTE MANAGEMENT GOALS**

- .1 Prior to start of Work conduct meeting with Departmental Representative to review and discuss PSPC's Waste Management Plan and Goals. PSPC's Waste Management Goal is to reduce to its minimum the total Project Waste to be diverted from landfill sites..
- .2 Accomplish maximum control of solid construction waste.
- .3 Preserve environment and prevent pollution and environment damage.

1.2 RELATED REQUIREMENTS

- .1 Not Used.

1.3 REFERENCES

- .1 LEED Canadian Green Building Council (CGBC), Green Building Rating System, For New Construction and Major Renovations LEED Canada-NC, Version 1.0 - December 2004.

1.4 DEFINITIONS

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Not used.
- .3 Not used.
- .4 Inert Fill: inert waste - exclusively asphalt and concrete.
- .5 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .6 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .7 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .8 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .9 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.

- .10 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .11 Separate Condition: refers to waste sorted into individual types.
- .12 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

1.5 DOCUMENTS

- .1 Not used.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project.
 - .1 Failure to submit could result in hold back of final payment.
 - .2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled, co-mingled and separated off-site or disposed of.
 - .3 For each material reused, sold or recycled from project, include amount in tonnes, quantities by number, type and size of items and the destination.
 - .4 For each material land filled or incinerated from project, include amount in tonnes of material and identity of landfill, incinerator or transfer station.

1.7 WASTE AUDIT (WA)

- .1 Not used.

1.8 WASTE REDUCTION WORKPLAN (WRW)

- .1 Not used.

1.9 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)

- .1 Prepare MSSP and have ready for use prior to project start-up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated materials in areas which minimize material damage.
- .7 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
 - .1 Transport to approved and authorized recycling facility.

- .8 Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition.
 - .1 Ship materials to site operating under Certificate of Approval.
 - .2 Materials must be immediately separated into required categories for reuse or recycling.

1.10 WASTE PROCESSING SITES

- .1 Provide to the Departmental Representative information on the selected waste processing site, location of facility and proof that site is authorized by the Province to receive such material.
 - .1 Province:
 - .2 Name:
 - .3 Telephone:
 - .4 Fax:

1.11 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 On-site source separation is recommended.
 - .2 Remove co-mingled materials to off-site processing facility for separation.
 - .3 Provide waybills for separated materials.

1.12 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, oil and paint thinner into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:

- .1 Number and size of bins.
- .2 Waste type of each bin.
- .3 Total tonnage generated.
- .4 Tonnage reused or recycled.
- .5 Reused or recycled waste destination.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis.

1.13 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 approved by Departmental Representative.

1.14 SCHEDULING

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

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 SELECTIVE DEMOLITION

- .1 Reuse of Building Elements: this project has been designed to result in end of project rates for reuse of building elements as follows:
 - .1 Building Structure and Shell: 75 percent.
 - .2 Interior Non-Shell Elements: 50 percent.

3.2 APPLICATION

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.
- .2 Onsite resell of any discarded material, recyclable or not, is prohibited.

3.3 CLEANING

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.

- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

3.4 DIVERSION OF MATERIALS

- .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 SOR/2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor to 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 French 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 , balanced and fully operational.
 - .4 Certificates required by Utility companies: submitted.
 - .5 Operation of systems: demonstrated to Owner's personnel.
 - .6 Commissioning of mechanical systems: completed in accordance with 01 91 00 - Commissioning - mechanical and electrical installation requirements 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, and Contractor.

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

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 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 SOR/2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with , in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify Project requirements.
 - .2 Review warranty requirements and manufacturer's installation instructions.
 - .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 (2) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, four (4) final copies of operating and maintenance manuals in French.
- .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 or process flow, 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.
- .9 Provide CAD files, in scale and in format chosen by Consultant.

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.
- .6 Training: refer to other sections.

1.7 AS-BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative and Owner 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 "DOSSIER DE PROJET" 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, inspection certifications and field test records, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

1.9 FINAL SURVEY

- .1 Submit final site survey certificate in accordance with Section 01 71 00 - Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

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.
- .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 site; 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 site; 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 site; 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 Owner'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.
- .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.
- .3 Provide list for each warranted equipment, item, 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

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Not applicable.

1.2 REFERENCES

- .1 Not applicable.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Sort and reuse wastes in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal.

1.4 SITE CONDITIONS

- .1 Demolition and Reuse:
 - .1 Windows, spandrel panels, exterior metal sheeting and insulation on the cells' pavilions. as per drawings.
- .2 Demolition will follow in sequence as per the phasing of the project.
- .3 Notify Departmental Representative before disrupting access or services.

1.5 GENERAL INDICATIONS - DEMOLITION

- .1 Scope of demolition work described on plans is for information only and should not be considered restrictive or limiting.
- .2 Examine carefully the drawings of all specialties involved in order to measure the exact scope of work.
- .3 Plans should serve as a guide to the Contractor, which has overall responsibility with-specialized contractors, to establish the size and scope of the demolition work required to complement and complete the work of the plans
- .4 Proceed with caution so as not to damage the works to be preserved, to minimize the work of subsequent occasions and never leave unprotected building elements.

1.6 HANDLING AND MATERIAL PROTECTION

- .1 Protect existing structures to remain in place and those to be recovered. If they are damaged, replace or repair them immediately to the satisfaction of the Departmental Representative at no cost.

Part 2 Products**1.7 EQUIPEMENT**

- .1 Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.

- .2 Where possible use water efficient wetting equipment/trucks/attachments when minimizing dust.
- .3 Demonstrate that tools are being used in manner which allows for salvage of materials in best condition possible.

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.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
 - .1 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.
 - .2 Immediately notify the Departmental should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.
 - .3 Ensure the alarm system and other services are operational at all times following recommendations of Departmental Representative.

3.2 PREPARATION

- .1 Protection of In-Place Conditions:
 - .1 Verify with Departmental Representative that site has been secured before commencing the demolition.
 - .2 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.
 - .3 Keep noise, dust, and inconvenience to occupants to minimum.
 - .1 Disconnect and cap ventilation ducts to prevent dust propagation throughout the interior system or other sectors of the building.
 - .4 Protect building systems, services and equipment.
 - .5 Provide temporary dust screens, covers, railings, supports and other protection as required.
 - .6 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.

3.3 DEMOLITION WORK / REMOVAL

- .1 Removed materials are property of Departmental Representative.
 - .1 The furniture items left on site by Departmental Representative at demolition are to be removed from work site by Contractor.
- .2 Dismantle parts of the existing building where removal is necessary for new construction
- .3 Remove and store materials to be salvaged, in manner to prevent damage.
 - .1 Store and protect in accordance with requirements for maximum preservation of material.
- .4 Trim edges of partially demolished building elements to tolerances.
- .5 Maintain structural integrity of structure.
- .6 Systematically remove finishes, furnishings, and mechanical and electrical equipment as indicated by Departmental Representative..
- .7 Wherever possible, transfer material assemblies from heights to ground level for easier disassembly. Take appropriate measures to ensure safety.
- .8 Source separate for recycling materials that cannot be salvaged for reuse.
- .9 Remove materials that cannot be salvaged for reuse or recycling and dispose of in accordance with applicable codes at licensed facilities.
- .10 Removal of windows and doors or openings in the exterior walls and roofs will be gradual, so as to be rebuilt on the same day, otherwise, the Contractor shall establish a perfect temporary weather tightness. The Contractor shall be responsible for damage due to inadequate protection. Do not undertake this work in rain, snow or cold weather.
- .11 It is prohibited to sell or burn down demolition materials on site.
- .12 Workers must utilize adequate fall protection and certified harness and belay systems where Departmental Representative considers it necessary.
- .13 Polycarbonate screen sheets, in sufficient amount for the ongoing phase, are reused throughout the various phases. At the end of the Work, give screens to Departmental Representative. Each removal shall leave the space clean, ready for the next step.

3.4 HIDDEN OR UNKNOWN CONDITIONS

- .4 The Contractor shall perform all the required checks so as not to cut water supply pipes, gas, electricity, telephone or other similar services. This includes and should not be restrict or limit to consulting:
 - .1 Mechanical, electrical and telephony existing plans, but also the Departmental Representative' plans;
 - .2 Information from maintenance team that have a special knowledge of the area; and

- .3 Suppliers or companies, installations owners, if they are aware of the exact location of supply conduits are located at work site.
- .4 Should there be a lack of specific information, Contractor must track the conduits with a detector in the affected slabs or walls.
- .5 Should the Contractor neglect to perform all these verifications, he will be accountable for every service sectioning and will be bound to the fixing costs in case of damage, or additional degradation of the building.

3.5 CLEANING AND REPAIR

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Refer to demolition drawings and specifications for items to be salvaged for reuse.
- .4 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 – Construction / Demolition Waste Management
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements, article 19 – Movement of Vehicles
- .5 Restore areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 Scope of Work:
 - .1 Perforated stainless steel sheet security screens, over window secured air dampers.
 - .2 Framing around the security glass, in the guard stations.

1.2 RELATED REQUIREMENTS

- .1 Section 07 92 00 – Joint Sealing.
- .2 Section 08 44 13 – Glazed Aluminium Curtain Walls.
- .3 Section 08 50 10 – Hybrid Stainless Steel / Aluminium Windows

1.3 REFERENCES

- .1 ASTM International
 - .1 ASTM A53/A53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A269/A269M-15a, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A307-14 Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 CSA International
 - .1 CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CAN/CSA G164-92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA S16-14, Design of Steel Structures.
 - .4 CSA W48-14, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .5 CSA W59-13, Welded Steel Construction (Metal Arc Welding)(Metric).
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 Master Painters Institute (MPI)
 - .1 MPI Architectural Painting Specifications Manual, latest edition.

1.4 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 sections plates pipe tubing bolts and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Submit two (2) copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 35 29.06 – Health and Safety Requirements. Indicate VOCs during application and curing.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province Territory of QUEBEC, Canada.
 - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - .3 Shop drawings shall illustrate following construction details: specialties, general arrangements, typical and special conditions of installations, materials, connections, accompanying items, anchors, location of fasteners and of exposed interfaces with adjacent materials.

1.5 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Exposed surfaces of stainless steel items to be covered with thick self-adhesive paper or peelable plastic film before shipment of these items to site.
 - .3 Surfaces must not be cleared of protecting coating until final cleaning of building. Provide necessary instructions for removal of these protections.
 - .4 Replace defective or damaged materials with new.
- .4 Wrapping Waste Management and Disposal: recuperate wrapping waste as directed in Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse / recycling in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal.
- .2 Remove all packaging materials from site and send to appropriate recycling facilities. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements, article 19 – Movement of Vehicles

Part 2 Products**2.1 MATERIALS**

- .1 Steel sections and plates: Grade 300W, to CSA G40.20/G40.21, thickness as indicated in drawings.
- .2 Perforated stainless steel sheet security screens: to ASTM A240/A240M, grade 304. 1.52mm ga, 2.38mm staggered holes, 33% open area.
 - .1 Shop-painted finish.
- .3 Welding materials: to CSA W59.
- .4 Welding electrodes: to CSA W48 Series.
- .5 Bolts and anchor bolts: to ASTM A307, prison-security grade.
- .6 Aluminium sheeting: smooth.

2.2 FABRICATION

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Use self-tapping shake-proof flat round oval headed screws on items requiring assembly by screws or as indicated.
- .3 Where possible, fit and shop assemble work, ready for erection.
- .4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 FINISHES

- .1 Galvanization: hot dip with zinc coating, 600 g/m², ASTM A123/A123M. Typical for all exterior assemblies.
- .2 Primer applied in shop: in accordance with product MPI-EXT 5.1B and standard GS-11 for chemical composition and SCAQMD Rule 1168 for VOC level.
- .3 Zinc-rich primer: ready for use, in accordance with product MPI-INT 5.2C and standard GS-11, for chemical composition and SCAQMD Rule 1168 for VOC level.
- .4 Painting systems for non-galvanized interior metals: refer to Section 09 91 23 – Painting.

2.4 SHOP PAINTING

- .1 Spray application:
 - .1 Provide and maintain equipment that is suitable for intended purpose, capable of atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
 - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
 - .3 Apply paint in uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
 - .4 Brush out immediately all runs and sags.
 - .5 Use brushes and rollers to work paint into cracks, crevices and places which are not adequately painted by spray.
- .2 Primer: VOC limit 250 g/L maximum to GS-11 CCD-047a CCD-048.
- .3 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
- .4 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.
- .5 Surfaces to be welded on site must be cleaned and must not be coated with paint.

2.5 STEEL ANGLE

- .1 Steel angles: galvanized prime painted, sizes indicated.
- .2 Finish: shop painted.
 - .1 Primer: VOC limit 250 g/L maximum to GS-11 when applied onsite.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for metal fabrications installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Ministerial Representative.
 - .2 Inform Ministerial Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed Ministerial Representative.

3.2 ERECTION

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- .3 Provide suitable means of anchorage acceptable to Ministerial Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
- .4 Exposed fastening devices to match finish and be compatible with material through which they pass.
- .5 Supply components for work by other trades in accordance with shop drawings and schedule.
- .6 Make field connections with bolts to CSA S16 Weld field connection.
- .7 Deliver items over for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.
- .8 Once assembly is completed, use primer to touch up rivets, welds done on site, bolts and burned or scratched surfaces.
- .9 Using zinc-rich primer, touch up galvanized surfaces in places burned during on-site welding.

3.3 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 Sort and reuse wastes in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements, article 19 – Movement of Vehicles.

3.4 PROTECTION

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

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 07 26 00 - Vapour Retarders and Air Barriers.
- .2 Section 08 44 13 - Glazed Aluminum Curtain Walls.
- .3 Section 08 50 10 - Hybrid Stainless Steel / Aluminum Windows.

1.2 REFERENCES

- .1 Canadian Urethane Foam Contractors Association (CUFCA).
 - .1 Quality Assurance Program.
 - .2 Sprayed Polyurethane Foam – Certified Installer – Manual.
- .2 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C518-15, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - .2 ASTM C1338-14, Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
 - .3 ASTM D1621-10, Standard Test Method for Compressive Properties Of Rigid Cellular Plastics.
 - .4 ASTM D1622-14, Standard Test Method for Apparent Density of Rigid Cellular Plastics.
 - .5 ASTM D1623-09, Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
 - .6 ASTM D2126-15, Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
 - .7 ASTM D2842-97, Standard Test Method for Surface Strength of Paper (Wax Pick Method).
 - .8 ASTM D6226-15, Standard Test Method for Open Cell Content of Rigid Cellular Plastics.
 - .9 ASTM E 96-15, Test Methods for Water Vapour Transmission of Materials.
- .3 Underwriters Laboratories of Canada (ULC).
 - .1 CAN/ULC-S101-14, Standard Methods of Fire Endurance Tests of Building Construction and Materials.
 - .2 CAN/ULC-S102-10, Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies.
 - .3 CAN/ULC-S705.1-15, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density.
 - .4 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density - Application.
 - .5 CAN/ULC-S770-15, Standard test method for determination of long term thermal resistance of closed-cell thermal insulating foams.

- .6 CAN/ULC-S774-14, Standard Laboratory Guide for the Determination of Volatile Organic Compound Emissions from Polyurethane Foam.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 29.06 – Health and Safety Requirements.
- .3 Test Reports:
 - .1 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 Submit laboratory report on compatibility and adhesion between various products used: polyurethane, coatings, membranes, all other substrates.
- .4 Quality Control Reports from manufacturer:
 - .1 Submit, in the three (3) days following execution of quality control tests prescribed at article QUALITY CONTROL TESTS (Part 3), copies of the written reports made by manufacturer to attest that the Works were achieved in conformity to prescribed criteria.

1.4 QUALITY ASSURANCE

- .1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Installer doing work under this section must be trained and accredited by CUFCA.
- .3 Applicators to conform to CUFCA Quality Assurance Program (Canadian Urethane Foam Contractors Association).
- .4 Run a sample, apply insulation to a wall section of at least 10 m², showing an outer angle and aperture and having characteristics typical of project as a whole. This sample may be part of finished work.
- .5 Provide a copy of daily quality control reports as required under CAN/ULC-S705.2.
- .6 Role of manufacturer's representative:
 - .1 Verify substrate prior to commencement of work, during application and upon completion.
 - .2 Provide technical assistance to installer and assist with proper installation of insulation.

1.5 TRANSPORTING, STORING AND HANDLING

- .1 Transport, store and handle materials in accordance with Section 01 61 00 – Commons Product Requirements, as well as manufacturer's instructions.

1.6 APPLICATION AND PROTECTION MEASURES

- .1 Any application of sprayed insulation foam is achieved uniquely on the exterior side of the building.
- .2 Ensure adequate ventilation in work area, by provision of fresh air as well as extraction of stale air, during the full length of the application and during the following 24 hours, in order to guarantee safe work environment, and non-toxic, non-polluted surroundings.
- .3 Install temporary protection in order to prevent ambient air, outside work area, gets contaminated by the sprayed insulation or by toxic fumes.
- .4 Protect adjacent surfaces from damage that may be caused by projection.
- .5 Protect workers in accordance with local regulations and with manufacturer's standards and recommendations.
- .6 Proceed with application of sprayed insulation only when surface temperature and ambient air temperature are within the limits prescribed by manufacturer.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse / recycling in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal.
- .2 Remove all packaging waste from site and dispose of materials at appropriate facility. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements, article 19 – Movement of Vehicles

Part 2 Products**2.1 INSULATION**

- .1 Sprayed-on insulation : sprayed polyurethane foam closed-cell, to CAN/ULC S705.1, TYPE 2.
 - .1 Density: ASTM D1622 minimum : 33 Kg/m³
 - .2 Thermal resistance: ASTM C518, 180 j / 23⁰C minimum 1,17 / 25mm RSI
 - .3 Long term thermal resistance: CAN/ULC S770 minimum 1,05 / 25mm RSI
 - .4 Dimensional stability: ASTM D 2126 (% variation volume at 28 jours)
 - 20⁰C minimum, -0.03 %,
 - 70⁰C RH > 97 +/- 3 % Max. +9.8%
 - 80⁰C, Max. +2.9 %
 - .5 Flame spread: CAN/ULC S102 Max. 200 IPF
 - .6 Smoke development: CAN/ULC S102 Max 396 IDF
 - .7 Compressive resistance: ASTM D1621 minimum 195 KPa
 - .8 Tear resistance: ASTM D1623 minimum 355 KPa

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- .9 Open cells: ASTM D6226 < 1%
 - .10 Water absorption: ASTM D2842 Max. 0.8%
 - .11 Mold resistance: ASTM C1338 minimum, no growth
 - .12 VOC: CAN/ULC S 774, max. 1 day
 - .2 Insulation applied by injection: semi-rigid dual-component low-density polyurethane foam for application by injection, in accordance with CAN/ULC S705.1.
 - .1 Density: ASTM-D-1622, 8.08 kg/m³
 - .2 Water absorption (%): ASTM D-2842, 74%
 - .3 Heat resistance: ASTM C-518, 0.61 / 25mm RSI
(180 days at 23°C)
 - .4 Dimensional stability: ASTM D-2126 % variation in volume
(28 days)
-20°C min. 0.8%
70°C max. -2.3% (90% HR)
 - .3 Primers: in accordance with manufacturer's recommendations for surface conditions.

2.2 EQUIPEMENT

- .1 Spray equipment must comply with CAN/ULC S705.2 and manufacturer's recommendations.

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 VERIFICATION

- .1 Verification of conditions: before applying insulation, verify if support surfaces and work already carried out through other sections is completed, acceptable and ready for work under this section, as per the manufacturer's written instructions.
 - .1 Visually inspect support surfaces in the presence of the Departmental Representative.
 - .2 Report any discrepancy or non-compliant component to the Departmental Representative.
 - .3 Do not begin work until corrective measures have been applied, and written approval has been obtained from Departmental Representative.
- .2 Ensure that all work to be performed before application of insulation is completed. This work includes, but is not limited to, the following:

- .1 Masonry links;
 - .2 Furring, blockings, rough frames, backs of fasteners, recessed items;
 - .3 Coating, membrane, flashing, counter-flashing;
 - .4 Mechanical restraints;
 - .5 Mechanical and electrical work;
 - .6 Firewall;
 - .7 Primer.
- .3 In accordance with CAN/ULC-S705.2 and requirements below, check these conditions:
- .1 Surfaces to be covered with foam thermal insulation must be free of moisture, frost, oil, rust or other foreign matter that may hamper product adhesion. In case of doubt, apply primer.
 - .2 Ensure full curing of substrates: concrete, mortar, coatings, membranes, primers or any other surfaces, before foam is sprayed.
 - .3 Ensure that adhesion of membranes and coatings to various substrates is adequate, taking account of weather conditions when membranes, coatings and sprayed insulation are applied.
- .4 Oily surfaces such as Z bars, steel deck, curtain wall purlin and mullion to be primed as described in CAN/ULC-S705.2, Section A 1.7.
- .5 Comply with acceptable moisture content for each material.

3.3 APPLICATION

- .1 Prime galvanized metal surfaces (sous-entremises) and others as recommend by manufacturer.
- .2 Drill hollow structural elements to allow the injection of insulation where indicated.
- .3 Temporarily brace doors and windows to prevent warping of frames due to expansion of sprayed in place insulation.
- .4 Apply insulation so as to ensure continuous heat protection to building items and empty spaces.
- .5 Follow recommendations in CAN/ULC-S705.2 regarding use of primer.
- .6 Apply insulation on clean, dry surfaces and when weather conditions meet requirements in CAN/ULC-S705.2 and in manufacturer's instructions.
- .7 Apply insulation when only when surface temperatures of substrate and ambient air are above -20°C.
- .8 Project insulation in successive layers each at least 15 mm and at most 50 mm thick.
- .9 Carefully adjust insulation on items to be covered and around electrical boxes, pipes, air ducts and framing running through it.
- .10 Do not apply insulation less than 75 mm from chimneys, steam ducts, recessed lighting or other heat sources.

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- .11 Do not enclose insulation until installation work has been inspected and approved by Departmental Representative.

3.4 TOLERANCE

- .1 Apply product so as to have average total thickness of $\pm 6\text{mm}$ as indicated in drawings. Perform at least one inspection for every 150 m^2 of application surface.
- .2 Average is based on result of nine (9) readings on a surface of 1 m^2 .

3.5 QUALITY CONTROL TESTS

- .1 Onsite quality control tests made by manufacturer
 - .1 The manufacturer shall formulate recommendations with regards to the use of his product(s) and proceed with periodical visits on site to verify if the Work complies to his standards.

3.6 CLEANING

- .1 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements.
- .2 Clean adjacent surfaces.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 07 21 29.03 – Sprayed insulation - Polyurethane foam.
- .2 Section 07 92 00 – Joint Sealing
- .3 Section 08 44 13 – Glazed Aluminum Curtain Walls
- .4 Section 08 50 00 – Hybrid Stainless Steel/Aluminum Windows

1.2 REFERENCE STANDARDS:

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-37-GP-56M (9th edition), Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
 - .2 CAN/CGSB-51.34-34-M86, Vapour Barrier, Polyethylene Sheet, for Use in Building Construction.
- .2 American Society for Testing and Materials International (ASTM).
 - .1 ASTM D412-2013, Standard Test Methods for Mechanical Fasteners in Wood.
 - .2 ASTM D903-98 (2010), Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
 - .3 ASTM D5147/5147M-14, Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
 - .4 ASTM E 96/96M-16, Test Methods for Water Vapour Transmission of Materials.
 - .5 ASTM E154/154M-08a (2013)e1, Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
 - .6 ASTM E283-04 (2012), Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 - .7 ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls, by Uniform Static Air Pressure Difference.
 - .8 ASTM E2178-13, Standard Test Method for Air Permeance of Building Materials

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include:
 - .1 Product characteristics.

- .2 Performance criteria.
- .3 Limitations.
- .3 Submit one (1) copy of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS).
- .4 Mock-up:
 - .1 Construct mock-up approximately six (6) m² of sheet vapour barrier installation including one lap joint, one inside corner and at one opening. Mock-up may be part of finished work.
 - .2 Mock-up will be used to judge workmanship, substrate preparation, and material application.
 - .3 Locate where indicated.
 - .4 Allow forty-eight (48) hours for inspection of mock-up by Departmental Representative before proceeding with vapour barrier work.

1.4 QUALITY ASSURANCE

- .1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .3 Instructions: submit manufacturer's installation instructions and comply with written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.
- .4 Membrane must be installed by installer trained and recognized by manufacturer of product to be installed.
- .5 Installer must provide Departmental Representative proof of certification if requested.
- .6 Role of manufacturer's representative:
 - .1 Verify substrate prior to commencing work, during installation of membrane and upon completion of work.
 - .2 As required, provide technical assistance to installer and assist with installing membrane properly.
- .7 Materials: provide and install basic materials for each type of product from same manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Storage and protection:
 - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver in labelled packaging. Store and handle in accordance with manufacturer's instructions. Protect from weather, extreme temperatures and work site incidents. Remove and dispose of damaged materials in accordance with applicable regulations.

1.6 SITE CONDITIONS

- .1 Site Environmental Requirements:
 - .1 Maintain substrate surface to be waterproofed at temperature indicated in written instructions of waterproofing sealant manufacturer.
- .2 Install upon completion of construction work and preparation of substrate, ready to receive waterproofing membrane.
- .3 Protect the plants and vegetation from damage caused by the work.

1.7 WASTE MANAGEMENT AND ISPOSAL

- .1 Separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Divert unused sealants and caulking to a certified hazardous materials site.
- .4 Do not dispose of unused sealing products into waterways, storm or sanitary sewers, lake or other area representing a health and environmental risk.

1.8 EXTENDED WARRANTY

- .1 For Work of this Section 07 26 00 – Vapour retarders and air barrier, the twelve (12) month warranty period is extended to sixty (60) months.
- .2 Provide a written document jointly prepared and signed by the manufacturer and the installer and issued in the name of Canada, ensuring the work against defects in materials, workmanship and installation for the period specified above.

Part 2 Products**2.1 SELF-ADHESIVE MEMBRANE**

- .1 Transition membrane, sealing exterior gypsum and connection joints and around exterior openings. SBS modified bitumen, three-ply polyethylene, minimum thickness 1.0 mm and appropriate width.
- .2 Minimum requirements:
 - .1 Tensile Strength: 11.3 / 15.4 kN/m (ASTM D5147)
 - .2 Elongation at break: 40 / 25 (ASTM D5147)
 - .3 Puncture resistance: 747 N (ASTM E154)
 - .4 Water vapour permeance: < 0.90ng/Pa(sm²) ASTM E96
 - .5 Air permeance (75Pa): 0.0013 L/sm² (ASTM E2178)
 - .6 Water absorption: 0.1% max. (ASTM D5147)

2.2 MEMBRANE PARE-AIR/VAPEUR

- .1 Prefabricated sheet, to ONGC 37.56M, thermofusible, non-woven polyester SBS, 180 g/m².

- .2 Minimum requirements:
- .1 Top and underside surfaces: thermofusible plastic film.
 - .2 Minimum thickness: 3 mm.
 - .3 Tensile Strength: L=17 kN/m (CAN/CGSB-37-GP-56)
T=12.5 kN/m
 - .4 Elongation: L=60% (CAN/CGSB-37-GP-56)
T=65%
 - .5 Softening point: > 110°C.
 - .6 Cold bending (°C): -30°C.
 - .7 Water vapour permeance: 0.21 ng/Pa s m² (ASTM E96).
 - .8 Air leakage (75Pa): Non-measurable (ASTM E283).

2.3 LIQUID MEMBRANE:

- .1 High yield sealant, two compound, 100% solids content for trowel or caulking gun application.
- .1 Lap shear (N/m): 2,000.

2.4 PRIMER FOR THERMOFUSIBLE SELF-ADHESIVE MEMBRANE

- .1 Description: Water based bitumen free polymer primer, designed to enhance adhesion of self-adhesive membranes to most substrates. For use when a solvent-based primer is not recommended.

2.5 ACCESSORIES

- .1 Sealant: compatible with vapour retarder materials, recommended by vapour retarder manufacturer.

Part 3 Execution

3.1 EXAMINATION AND PREPARATION OF SURFACES

- .1 Inspect substrate and ensure related work is completed prior to beginning work. Commencement of work constitutes acceptance of installation conditions.
- .2 Ensure surfaces are smooth, dry, free of ice and debris prior to starting work in accordance with manufacturer's prescriptions and recommendations.
- .3 Do not install materials when it is raining or snowing.
- .4 Provide solid support for cracks bigger than 3.2 mm. Fill in cracks.

3.2 SELF-ADHESIVE MEMBRANE INSTALLATION

- .1 Prime surfaces to receive membrane at rate recommended by membrane manufacturer. Do not prime more than can be covered the same day with membrane. Prime surfaces again if membrane is not applied the same day.

- .2 Cover all interior and exterior angles with 150 mm wide membrane strip centred on corner. Apply directly to substrate, removing space between substrate and membrane.
- .3 Adhere membrane to support, while unrolling silicon film.
- .4 Lap each strip by 75 mm laterally and transversally.
- .5 Repair tears and holes with suitable membrane. Overlap damaged area minimum 100 mm. Seal patch with sealing compound.
- .6 After entire membrane is glued, apply pressure over surface using rubber roller.
- .7 Carefully examine membrane at the end of each day and prior to installation of insulation. Seal top edge of membrane with mastic at the end of the day when rain is forecast or if application is delayed by more than one day.
- .8 Cover small projections (pipes, etc.) with detail membrane and seal with mastic.
- .9 Install insulation as soon as possible after professional's inspection.
- .10 Use sheets of largest practical size to minimize joints.
- .11 Mechanically attach only self-adhering membranes around openings where membrane is covered with sprayed on polyurethane insulation.
 - .1 Galvanized steel angle 32 mm x 32 mm x 0.42 mm thick, attached every 400 mm c/c.

3.3 AIR/VAPOUR BARRIER MEMBRANE INSTALLATION

- .1 Prime surfaces to receive membrane at rate recommended by membrane manufacturer. Do not prime more than can be covered the same day with membrane. Prime surfaces again if membrane is not applied the same day.
- .2 Place protective membrane strip at corners and joints prior to application of main membrane.
- .3 Fully adhere membrane horizontally to above-ground wall, starting at lowest point. Use approved propane torch.
- .4 Lap 75 mm strips laterally and 150 mm at ends. Stagger joints minimum 300 mm.
- .5 Seal junctions with other surfaces to ensure continuity of air/vapour barrier system. Seal membrane penetrated by anchors or other construction element with liquid membrane.
- .6 Apply sealing bead at the end of each work day to top edge of membrane and ends to prevent water infiltration between substrate and membrane.
- .7 Coordinate inspection of waterproofing work with Departmental Representative 48 hours in advance prior to installation of insulation panel.

3.4 WALL JUNCTIONS/OPENINGS

- .1 Seal membrane to wall openings to prevent infiltrations (see plans and drawings). Seal air/vapour barrier membrane to other construction elements such as foundations and curtain walls. To ensure continuity of air/vapour barrier, seal

all window and door junctions and structural elements where vapour barrier cannot be installed.

- .1 Mechanically attach self-adhering membrane using securement bars to connections, window openings, door frames, terminations and building perimeter covered with sprayed on insulation. Install staples through lapped sheets at sealant bead into wood substrate.
- .2 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.5 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 07 92 00 – Joint Sealing.
- .2 Section 08 44 13 – Glazed Aluminium Curtain Walls
- .3 Section 08 50 10 – Hybrid Stainless Steel/Aluminum Windows

1.2 REFERENCES

- .1 The Aluminum Association Inc. (AAI)
 - .1 AAI-Aluminum Sheet Metal Work in Building Construction-2002.
 - .2 AAI DAF45-03, Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A240/A240M-15b, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - .2 ASTM A792/A792M-10(2015), Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - .3 ASTM D523-14, Standard Test Method for Specular Gloss.
 - .4 ASTM D822/D822M-13, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .3 Association canadienne de normalisation (CSA)/CSA International
 - .1 AAMA/WDMA/CSA 101/I.S.2/A440-11, Standard/Specification for Windows, Doors, and Unit Skylights.
 - .2 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature for sheet metal flashing systems materials, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit two (2) - 50 x 50 mm samples of each type of sheet metal material, finishes and colours.
- .4 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
 - .1 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.

1.4 DELIVERY, STORAGE AND HANDLING

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

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Sort waste for reuse, recycling and recovery in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal.
- .2 Sort scrap steel, metal and plastic for reuse, recycling and recovery, and place in designated containers.
- .3 Remove all packaging materials from site and send to appropriate recycling facilities. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements.

Part 2 Products**2.1 SHEET METAL MATERIALS**

- .1 Aluminum-zinc alloy coated steel sheet: to ASTM A792/A792M, commercial quality, grade AZ180 coating, not chemically treated, for paint finish, 0,65 mm base metal thickness.
- .2 Aluminum sheet: commercial quality, 1,6 mm base metal thickness

2.2 PREFINISHED STEEL SHEET

- .1 Flashing and metallic trim coating: prefinished steel sheets, coated at the factory with a layer of polyester-modified silicones, a minimum thickness of 0.65 mm unless otherwise stated.
 - .1 Category: F1S
 - .2 Colour: chosen by the Representative of the Ministry, among the standard colors offered by the manufacturer. Consider a color per coating type.
 - .3 Specular gloss: 30 units, with a maximum deviation of 5 units more or less, according to ASTM D523.
 - .4 Coating thickness: at least 25 micrometers.
 - .5 Resistance to accelerated weathering with a chalk rating of 8, a bleach plus 5 units and an erosion of less than 20%: in accordance with ASTM D822 under the conditions of the following test.
 - .1 Exposure time weathering: 1000 hours.
 - .2 Duration of exposure to moisture: 1000 hours.
 - .6 Where indicated, sheet metal screen perforated between 35 and 40% of its surface. Staggered 3mm diameter punch. See Section 05 50 00 – Metal Fabrications.

2.3 PREFINISHED ALUMINUM SHEET

- .1 Finishing coating: visible surfaces of constituent aluminum elements must be finished in accordance with "Designation System for Aluminum Finishes" published by Aluminum Association.
- .2 Natural anodized finish, Class 1, designation AA-M12C22A41.
- .3 Thickness specified for prefinished aluminum sheet applies to base metal.

2.4 ALUMINUM SILL

- .1 Extruded aluminum, tempered alloy 6063-T5, shaped as indicated in drawings. Depth to ensure projection of at least 30 mm with underlying coating.
- .2 Extruded aluminum anchors and staples devices to be pre-drilled in order to receive fasteners.
- .3 Finish: visible surfaces of constituent aluminum elements must be finished in accordance with "Designation System for Aluminum Finishes" published by Aluminum Association.
 - .1 Natural anodized finish, Class 1, designation AA-M12C22A41.

2.5 ACCESSORIES

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Sealants: refer to Section 07 92 00 – Joint Sealing.
- .3 Underlay for metal flashing: self-adhesive membrane; refer to Section 07 26 00 – Vapour Retarders and Air Barriers.
- .4 Cleats: of same material, and temper as sheet metal, minimum 100 mm wide. Thickness same as sheet metal being secured.
- .5 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.
- .6 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .7 Retouching paint: as per prefinished sheet metal manufacturer's recommendations.

2.6 FABRICATION

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

- .6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.7 METAL FLASHINGS

- .1 Form flashings, copings and fascias to profiles indicated, of galvanized prefinished steel, and include staples.

2.8 REGLETS AND CAP FLASHINGS

- .1 Shape metal cap flashing and reglet strips of 0.65 mm thick sheet metal to be built-in work for base flashings as detailed.
 - .1 Provide slotted fixing holes and steel/plastic washer fasteners.

2.9 ALUMINUM FINISHES

- .1 Finish exposed surfaces of aluminum components in accordance with AA DAF45.
 - .1 Integral colour anodic finish: designation AA-M12C22A41 colour to match Departmental Representative's sample.
- .2 Appearance and properties of anodized finishes designated by Aluminum Association as Architectural Class 1, Architectural Class 2, and Protective and Decorative: to AAMA/WDMA/CSA-101/I.S.2/A440, for coating Classes 1, 2 and 3 respectively.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 INSTALLATION

- .1 Install sheet metal work as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Provide underlay under sheet metal.
 - .1 Secure in place and lap joints 100 mm.
- .4 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs.
 - .1 Flash joints using S-lock seams forming tight fit over hook strips, as detailed.
- .5 Lock end joints and caulk with sealant.
- .6 Install surface mounted reglets true and level, and caulk top of reglet with sealant.
- .7 Insert metal flashing into reglets under cap flashing to form weather tight junction.

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- .8 Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm. Lead wedge flashing securely into joint.
 - .9 Caulk flashing at reglet cap flashing with sealant.

3.3 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. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements.
- .3 Leave work areas clean, free from grease, finger marks and stains.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 07 62 00 – Sheet Metal Flashing and Trim
- .2 Section 08 44 13 – Glazed Aluminum Curtain Walls
- .3 Section 08 50 00 – Hybrid Stainless Steel/Aluminium Windows
- .4 Section 08 80 50 – Glazing and Laminate Polycarbonate

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM C881/C881M-15, Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
 - .2 ASTM C919-12, Standard Practice for Use of Sealants in Acoustical Applications.
 - .3 ASTM C920-14a, Standard Specification for Elastomeric Joint Sealants.
 - .4 ASTM C1135-15, Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants.
 - .5 ASTM C1248-08 (2012), Standard Test Method for Staining of Porous Substrate by Joint Sealants.
 - .6 ASTM D217-10, Standard Test Methods for Cone Penetration of Lubricating Grease.
- .2 Office des normes générales du Canada (CGSB)
 - .1 CAN/CGSB-19.13-M87 Sealing Compound, One-component, Elastomeric, Chemical Curing.
 - .2 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
 - .3 CAN/CGSB-19.21-M87, Sealing and Bedding Compound, Acoustical
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

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 joint sealants and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Manufacturer's product to describe:
 - .1 Caulking compound.
 - .2 Primers.

- .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
- .4 Backing rods.
- .3 Submit one (1) copy of data sheets required under WHMIS, in accordance with Section 01 35 29.06 – Health and Safety Requirements.
- .3 Samples:
 - .1 Submit two (2) samples of each type of material and colour.
 - .2 As required, for purposes of harmonization with adjacent materials, submit dried samples of sealants to be left visible, for each proposed colour.
- .4 Manufacturer's Instructions:
 - .1 Submit instructions to include installation instructions for each product used.

1.4 CLOSEOUT SUBMITTALS

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

1.5 DELIVERY, STORAGE AND HANDLING

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

1.6 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 four (4) degrees C.
 - .2 Joint substrates are dry.
 - .3 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

- .2 Joint-Width Conditions:
 - .1 Proceed with installation of joint sealants only where joint widths are more than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
 - .1 Proceed with installation of joint sealants only after contaminants capable of interfering with adhesion are removed from joint substrates.

1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Health Canada.
- .2 Departmental Representative will arrange for ventilation system to be operated on maximum outdoor air and exhaust during installation of caulking and sealants. Ventilate area of work as directed Departmental Representative by use of approved portable supply and exhaust fans.

Part 2 Products

2.1 SEALANT MATERIALS

- .1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.
- .2 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.
- .3 Where sealants are qualified with primers use only these primers.
- .4 Sealants and caulking should not contain VOCs exceeding 5% by weight as calculated from description of quantity of constituents used to make product.
- .5 In this section, products and materials with following characteristics will be favoured: water-based, water-cleanable, non-flammable, low VOC content, made without compounds contributing to destruction of ozone layer in upper atmosphere, made without compounds contributing to increased smog in lower atmosphere, without methylene chloride content and without chlorinated hydrocarbon content.

2.2 SEALANTS – DESCRIPTION

- .1 Single-component silicone-based sealant: to CAN/CGSB-19.13.
- .2 Preformed backing materials, compressible and non-compressible.
 - .1 Polyethylene, urethane, neoprene or vinyl foam units.
 - .1 Extruded cellular foam filling rods.
 - .2 Units oversized by 30% to 50%.

- .2 Neoprene units.
 - .1 Round and full rods, Shore A hardness of 70.
- .3 High-density foam units.
 - .1 Extruded cellular PVC foam units of extruded cellular polyethylene foam, Shore A hardness of 20, tensile strength of 140 to 200 kPa; or of extruded polyolefin foam, density of 32 kg/m³; or of neoprene, in dimensions recommended by manufacturer.
- .3 Non-bonding tape.
 - .1 Polyethylene tape not adhering to sealant.
- .4 Type 1 product: Low-module silicone sealant, to ASTM C920 and C1248.
 - .1 Zero flow and subsidence after 20 minutes.
 - .2 Shore A hardness: 15.
 - .3 Tensile strength (ASTM C1135): 0.24 Mpa.
 - .4 Tear strength (ASTM C1135): 0.7 kN/m.
 - .5 Adhesive strength on glass and aluminum: 5.2 kN/m.
 - .6 Joint movement: +100% to -50%.
- .5 Type 2 product: Single-component acetoxysilicone sealant, to ASTM C920, Type S, Grade NS, G, A, O and CAN/CGSB-19.13.
 - .1 Zero flow and subsidence after 20 minutes.
 - .2 Shore A hardness: 30.
 - .3 Tensile strength: 2.06 to 2.75 Mpa.
 - .4 Elongation: 550%.
 - .5 Joint movement: +25%.
 - .6 Colour: translucent.

2.3 SEALANTS – LOCATIONS

- .1 Perimeter of apertures formed in exterior walls (brick, block or prefabricated masonry unit) with frame contiguous with finishing coat: Type 1 product.
- .2 Joints formed in horizontal surfaces (cornices, eaves): Type 1 product.
- .3 Inner perimeter of apertures formed in outside walls, based on details in drawings: Type 2 product.
- .4 In prison area (inside cells), at junction of masonry or concrete and other materials, at perimeter of floors, at perimeter of secure ceilings, at perimeter of door frames and glass partitions, of furniture (except where a continuous weld is required and at places indicated in drawings): Type 1 product.
- .5 Sealant for glazing and curtain walls: Type 2 product.

2.4 JOINT CLEANER

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

Part 3 Execution**3.1 EXAMINATION**

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

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.

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

3.7 CLEANING

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

3.8 PROTECTION

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

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 Provide detention/security windows, designated "Option 1, in accordance with the Contract Documents". (The complete project shall be executed employing either all Option 1 type or all Option 2 type windows). The Work of this Section shall include but not be limited to the following:
 - .1 Commercial grade window assemblies fabricated from thermally broken curtain wall mullions, incorporating fixed glazing, and awning type secured air dampers with perforated stainless steel sheet security screens and carceral quality operating hardware.

1.2 RELATED REQUIREMENTS

- .1 Section 05 50 00 – Metal Fabrications
- .2 Section 07 21 29.03 – Sprayed insulation – Polyurethane foam.
- .3 Section 07 26 00 – Vapour Retarders and Air Barrier.
- .4 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .5 Section 07 92 00 – Joint Sealing.
- .6 Section 08 80 50 – Glazing and Laminated Polycarbonate.

1.3 REFERENCES

- .1 Aluminum Association (AA)
 - .1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.
- .2 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA CW-10-15, Care and Handling of Architectural Aluminum From Shop to Site.
 - .2 AAMA CW-11-85, Design Wind Loads and Boundary Layer Wind Tunnel Testing.
 - .3 AAMA 501-05, Methods of Test for Exterior Walls.
- .3 ASTM International
 - .1 ASTM A123/A123M-15, Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM A167-99(2009), Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .3 ASTM A653/A653M-15, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .4 ASTM B209-14, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - .5 ASTM B221-14, Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

- .6 ASTM D2240-15, Standard Test Method for Rubber Property—Durometer Hardness.
- .7 ASTM E283-04(2012), Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- .8 ASTM E330/E330M-14, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls, by Uniform Static Air Pressure Difference.
- .9 ASTM E331-00(2009), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Static Air Pressure Difference.
- .10 ASTM E547-00 (2009), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
- .11 ASTM E1105-15, Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 1.108-M89, Bituminous Solvent Type Paint.
 - .2 CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.
- .5 CSA International
 - .1 CSA-S157/S157.1-F05, Strength Design in Aluminum.
 - .2 AAMA/WDMA/CSA-101/I.S.2/A440-11, NAFS - North american fenestration standard/Specification for windows, doors, and skylights.
 - .3 CSA W59-13, Welded steel construction (metal arc welding).
- .6 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S710.1-11, Standard for Thermal Insulation – Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: coordinate work of this Section with installation of air barrier / vapour retarder placement (Section 07 26 00 - Vapour retarders and air barrier), flashing placement, installing ductwork to rear of louvres, components or materials (Section 07 62 00 – Sheet Metal Flashing and Trim).
- .2 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting one (1) week prior to beginning work of this Section on-site installation, with Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building subtrades.
 - .4 Review manufacturer's written installation instructions and warranty requirements.

1.5 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 curtain wall components, anchorage and fasteners, glass and infill, and internal drainage details and include product characteristics, performance criteria, physical size, finish and limitations and water flow diagrams.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Quebec, Canada.
 - .2 Indicate system dimensions, framed opening requirements and tolerances, adjacent construction, anchor details anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, and field welding required.
 - .3 Indicate scope and location of earthquake protections. Include calculations of earthquake protection design.
- .4 Samples:
 - .1 Submit copies in duplicate, for review and acceptance, of sample sections of curtain wall, 300 mm x 300 mm, showing surface, finish, colour and texture of prefinished aluminum, including a section of infill panel.
 - .2 Submit 2 samples 300 mm x 300 mm in size illustrating prefinished aluminum surface, finish, colour, texture, specified glass units, insulated infill panels, glazing materials illustrating edge and corner.
 - .3 Submit a complete functional window sample comprising the frame, fixed glazing and operable secured damper.
- .5 Test Reports:
 - .1 Submit substantiating engineering data, test results of previous tests by independent laboratory which purport to meet performance criteria, and supportive data.

1.6 CLOSEOUT SUBMITTALS

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

1.7 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Conform to applicable code for acoustic attenuation, sound transmission, requirements.
- .2 Mock-ups:

- .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
- .2 Produce work sample of an insulated gatehouse showing intermediate mullions, corner mullions, window mullions, column coverings, glazed surfaces, insulated infill panels, and doors.
 - .1 Mockup to be assemble to illustrate component assembly including glazing materials, weep drainage system, attachments, anchors, and perimeter sealant.
- .3 Locate mock-up where indicated by Departmental Representative.
- .4 Allow two (2) working days for Departmental Representative to show up on site. Allow five (5) working days for inspection of mock-up by Departmental Representative before proceeding with work.
- .5 When accepted, mock-up will demonstrate minimum standard of quality and materials for work of this Section.
- .6 Mock-up may remain as part of finished work.

1.8 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements 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 Handle work of this Section in accordance with AAMA CW-10.
 - .2 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .3 Store and protect aluminum glazed curtain wall components from nicks, scratches, and blemishes.
 - .4 Protect prefinished aluminum surfaces with wrapping strippable coating. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
 - .5 Replace defective or damaged materials with new.

1.9 AMBIENT CONDITIONS

- .1 Install sealants when ambient and surface temperature is above five (5) degrees C minimum.
- .2 Maintain this minimum temperature during and for forty-eight (48) hours minimum after installation of sealants.

1.10 EXTENDED WARRANTY

- .1 Contractor hereby warrants that glazed aluminum curtain wall will function as specified in accordance the General Conditions, but for a period of one hundred and twenty (120) months instead of twelve (12).

- .2 Provide a written document jointly prepared and signed by the manufacturer and the installer and issued in the name of Canada, ensuring the work against defects in materials, workmanship and installation for the period specified above.

1.11 SPARE PARTS

- .1 Provide, at the end of each phase, hardware and fitting items equivalent to 10% of those installed in said phase to the Departmental Representative. Spare parts should be the same as the list provided with the shop drawings. Workshop drawings of the proposed product must comply with Section 01 33 00 - Documents and Samples to be Submitted and clearly identify spare parts to be submitted at the end of the project, and report the total count (par part).

1.12 TRAINING

- .1 Training must be organized and provided by the manufacturer of the submitted fenestration product(s) to the personnel designated by the Departmental Representative in order to instruct and communicate maintenance and replacement procedures to the maintenance team.

Part 2 Products

2.1 SYSTEMS

- .1 Description:
 - .1 Vertical glazed aluminum curtain wall system includes thermally broken tubular aluminum sections with self supporting supplementary support framing, shop fabricated, factory prefinished, vision glass, insulated metal panel spandrel infill, swinging or sliding doors, column covers, and louvres; related flashings, anchorage and attachment devices.
 - .2 Sloped glazing system includes thermally broken tubular aluminum sections with self supporting supplementary support framing, shop fabricated, factory prefinished, vision glass plastic, insulated metal panel infill; related flashings, anchorage and attachment devices.
 - .3 Assembled system to permit re-glazing of individual glass (and infill panel) units from interior exterior without requiring removal of structural mullion sections.
 - .4 Window secured air damper unit, protected from interior and exterior sides by perforated stainless steel sheet security screens (as specified in Section 05 50 00 – Metal Fabrication), and equipped with tamperproof and vandal proof carceral quality operating hardware.
- .2 Performance Requirements:
 - .1 Design and size components to withstand dead and live loads caused by pressure and suction of wind, acting normal to plane of system as calculated in accordance with NBC.
 - .2 Design and size components to withstand seismic loads and sway displacement as calculated in accordance with applicable codes.

- .3 Limit mullion deflection to L/175 to ASTM E330 or to a maximum of 14 mm, with full recovery of glazing materials.
- .4 Size glass units and glass dimensions to limits established in CAN/CGSB-12.20.
- .5 Ensure system is designed to accommodate the following without damage to components or deterioration of seals.
 - .1 Movement within system.
 - .2 Movement between system and perimeter framing components.
 - .3 Dynamic loading and release of loads.
 - .4 Deflection of structural support framing.
- .6 Thermal Resistance and transmission of
 - .1 Thermal transmission coefficient: The glass and the frame must have a heat transfer coefficient (U) not exceeding $2.2 \text{ W / m}^2\text{K}$.
 - .2 Spandrel panels: RSI value at centre at least 4.04.
- .7 Condensation resistance to the frame the thermal performance is in accordance with AAMA 1503 a Condensation Resistance Factor ("condensation resistance factor" or CRF) greater than 70.
- .8 Limit air infiltration through assembly to $0.0003 \text{ m}^3/\text{s}/\text{m}^2$ of wall area, measured at a reference differential pressure across assembly of 75 Pa as measured in accordance with ASTM E283.
- .9 Vapour seal with interior atmospheric pressure of 25 mm sp, 22 degrees C, 40% RH: no failure
- .10 Water leakage: none, when measured to ASTM E331 and ASTM E547, at differential pressure of 720 Pa applied to entire panel.
- .11 Ensure system allows for expansion and contraction within system components when temperature range is 95 degrees C over 12 hour period without causing detrimental affect to system components.
- .12 Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior by weep drainage network.
- .13 Maintain continuous air barrier and vapour retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.
 - .1 Position thermal insulation on exterior surface of air barrier and vapour retarder.
- .14 Ensure no vibration harmonics, wind whistles, noises caused by thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system occur.
- .15 Operable parts: The windows of the cells or other rooms must be equipped with an opening frame to allow the inmate to ventilate. The free ventilation area of the window must be as shown on the plans, while having the maximum width achievable under the existing conditions.
- .16 Fly screens: Operable windows must be fitted with 18x16 mesh aluminum fly screens. The fly screens must be of commercial quality within the meaning of the Screen Manufacturer Association (SMA) and comply with

SMA 6001-2002. The fly screens must be added on the interior side of the security screens placed on the exterior side the secured air dampers and be secured to the frame by means of safety screws to facilitate the detection of possible sabotage.

- .17 Security screens: In addition to being provided with a fly screen, the operable window parts must be provided with security screens in the form of perforated steel plates. Refer to section 05 50 00 – Metal Fabrications.
- .18 Accessories: Window accessories must not be easily disassembled or torn off. The use of counterweights is prohibited. On the other hand, concealed locking bolts, if necessary, can be considered. Their use, when applicable, must be done in such a way as to protect them from the weather or infiltrations, and must in no case present any added risk of possible blockage or malfunction. Limit levers as much as possible.

2.2 MATERIALS

- .1 Extruded aluminum: to ASTM B221 alloy 6063.
 - .1 Finishing coats: To AAMA 2605 and AA DAF 45 Architectural Class I, clear anodized finish, minimum thickness 18 µm.
- .2 Sheet aluminum: to ASTM B209, utility category, clear anodized finish, 1588 mm thick.
- .3 Sheet steel: 0.952 mm thick, in accordance with ASTM A653/A653M, galvanized at 458 g/m² with corners sealed in concealed areas.
- .4 Steel sections: to ASTM A167, Type 304 stainless]; shaped to suit mullion sections.
- .5 Anchors: 3-way adjustable hot-dip galvanized cast iron.
- .6 Fasteners: stainless cadmium plate.
- .7 Bituminous paint: to CAN/CGSB 1.108-M89, Type 1, without thinner.
- .8 Insulated glazing panels:
 - .1 Refer to section 08 80 50 – Glazing.
- .9 Fire safety material : refer to section 07 84 00 - Fire Stopping.
- .10 Sealant:
 - .1 Sealant and structural sealant: refer to Section 07 92 00 – Joint Sealants.
 - .2 Sealing joints: EPDM compatible with silicone or extruded silicone, in accordance with limitations and restrictions in guideline DCC-045 regarding chemical composition.
 - .3 Supporting blocks: Neoprene, to CCD-45 and ASTM D2240, Shore A hardness 80 to 90 on durometer.
 - .4 Insulation: Single-constituent liquid foam hardening in moisture, low expansion level of sprayed foam in place. Product in accordance with ULC - S710.1 and manufacturer's written recommendations

2.3 COMPONENTS

- .1 Mullion profile
 - .1 Nominal dimension :
 - .1 Type 1 : 73 mm x 51 mm or 73 mm x 41 mm.
 - .2 Thermal break with interior tubular frames insulated from exterior support plates.
 - .3 Matching stops and pressure plate of sufficient size and strength to ensure adequate bite on glass and infill panels.
 - .4 Drainage holes, deflector plates and internal flashings to accommodate internal weep drainage system.
 - .5 Internal mullion baffles to eliminate "stack effect" air movement within internal spaces.
- .2 Covers: Pressure plate and snap-on caps
 - .1 Clear anodized extruded aluminum.
 - .2 Depth of cap 19 mm on all mullions.
- .3 Infill panel: internally reinforced, glazing edge sealed permitting internal air movement to glazing space, outside air barrier line
 - .1 Outer face: refer to section 08 80 50 – Glazing and Laminated Polycarbonate.
 - .2 Core: insulation: projected insulation. Refer to Section 07 21 29.03 – Sprayed Insulation – Polyurethane Foam.
 - .1 Thickness: Minimum 75 mm and 100 mm, depending on depth of mullions.
 - .3 Inner face:
 - .1 Non apparent: galvanized steel
 - .2 Apparent: aluminum 1.6 mm thick.
- .4 Apron: Aluminum extrusion in dipped 6063-T5 alloy, frame as indicated in drawings. Minimum depth to ensure projection of at least 30 mm with underlying coating.
 - .1 Anchor and staple device of extruded aluminum, pre-drilled to receive fasteners.
 - .2 Finish: Exposed surfaces of aluminum constituents must be finished in accordance with Designation System for Aluminum Finishes, published by Aluminum Association.
 - .3 Natural anodized finished, Class 1, designation AA-M12C22A41.
- .5 Vapour retarder and air barrier: specified in Section 07 26 00 - Vapour Retarders and Air Barriers.

2.4 FABRICATION

- .1 Fabricate system components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

- .2 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- .3 Prepare components to receive anchor devices. Install anchors.
- .4 Arrange fasteners and attachments to ensure concealment from view.
- .5 Prepare system components to receive hardware specified.
- .6 Reinforce interior horizontal head rail to receive track brackets and attachments.
- .7 Reinforce framing members for external imposed loads.
- .8 Visible manufacturer's identification labels not permitted.
- .9 Infill Panels:
 - .1 Aluminum sheet, 1.5 mm or as indicated in drawings, laminated to rigid insulation panel (polyisocyanurate), 25.4 mm, with 22 gauge galvanized steel on unexposed side. Aluminum finish must harmonize with frames forming curtain wall mullions. Profile as indicated.
 - .2 Rigid insulation: polyisocyanurate, 25.4 mm.
 - .3 Infill panels must be equipped with metal-coated protective liners on all edges to allow for application and movement of peripheral seals.
 - .4 Inner face of façade panels must be reinforced to prevent deflection from effects of wind and suction.
 - .5 Joints and angles of units must be adjusted precisely and then secured firmly. Joints must be tight, flush and weatherproof.
 - .6 Insulating material placed inside panels must be secured by fasteners welded to outer wall of inner panels. Impale insulation on fasteners.
 - .7 Ventilation and pressure equalization in air spaces must be ensured toward outer face of insulating material.
 - .8 Fasteners and accessories must not be exposed.
- .10 Finishes
 - .1 Finish coatings: conform to AAMA 612 AA.
 - .2 Exterior exposed aluminum surfaces: to AAMA Class 1, A41 anodized to 215-R1, clear, de 0,7 mm thickness, pre-treatment.
 - .3 Interior exposed aluminum surfaces: to AAMA A41, anodized to 215-R1, clear, de 0,18 mm thickness.
 - .4 Shop and touch-up primer for steel components: SSPC 25 Paint red oxide.
 - .5 Touch-up primer for galvanized steel surfaces: SSPC 20 Paint zinc rich.
 - .6 Concealed steel items: galvanized in accordance with ASTM A123 600 g/m².
 - .7 Apply 1 coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.
 - .1 VOC limit of 200 g/L, maximum to SCAQMD Rule 1113.

2.5 SOURCE QUALITY CONTROL

- .1 Perform work in accordance with AAMA GSM-1 AAMA CW-I-9. Maintain one (1) copy on site.
- .2 Manufacturer qualifications: company specializing in manufacturing the products specified in this section with minimum three (3) years documented experience.
- .3 Design structural support framing components to CAN/CSA-S157 under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the Province of Quebec.
- .4 Perform welding Work in accordance with CSA W59.2.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for aluminum curtain wall installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Verify dimensions, tolerances, and method of attachment with other work.
 - .3 Verify wall openings and adjoining air barrier and vapour retarder materials are ready to receive work of this Section.
 - .4 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .5 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed Departmental Representative.

3.2 INSTALLATION

- .1 Fixed and ventilating window groupings shall be shop-assembled to the fullest extent possible.
- .2 Installation in the field to be executed entirely from the exterior of the buildings
- .3 Remit temporary polycarbonate screens to Owner for installation on interior side of window openings. Ensure temporary screens are in place, and acquire Ministry Representative's approval to commence the installation.
- .4 Installation to proceed in Phases as indicated on the drawings, and as approved by the Ministry Representative.
- .5 Install curtain wall and sloped glazing system in accordance with manufacturer's instructions.
- .6 Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- .7 Use alignment attachments and shims to permanently fasten system to building structure. Clean weld surfaces; apply protective primer to field welds and adjacent surfaces.

- .8 Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances and align with adjacent work.
- .9 The junction between the back of the window frame and the face of the wall opening to be 2mm or less. Fill this joint flush with sealant, backed by compressible tape
- .10 Use thermal isolation where components penetrate or disrupt building insulation.
- .11 Install sill flashings.
- .12 Co-ordinate installation of fire stop insulation, specified in Section 07 84 00 - Fire Stopping, at each floor slab edge and intersection with vertical construction where indicated.
- .13 Co-ordinate attachment and seal of perimeter air barrier and vapour retarder materials.
- .14 Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- .15 Install fire-safing in areas as indicated.
- .16 Install perimeter sealant to method required to achieve performance criteria. Sealant, backing materials, and installation criteria in accordance with Section 07 92 00 - Joint Sealants.

3.3 SITE TOLERANCES

- .1 Maximum variation from plumb: 1.5 mm/m non-cumulative.
- .2 Maximum misalignment of two adjoining members abutting in plane: 0.8 mm.
- .3 Maximum sealant space between curtain wall and adjacent construction: 2 mm.

3.4 FIELD QUALITY CONTROL

- .1 Inspection by independent testing agency will monitor quality of installation and glazing.
 - .1 Test system to: ASTM E1105, AAMA 501.
 - .2 Evaluate installed system by thermo-photographic scan.
- .2 Manufacturer's Field Services:
 - .1 Obtain written report from manufacturer of curtain wall or glass verifying compliance of Work, in handling, installing, applying, protecting and cleaning of products, and submit written reports in acceptable format to verify compliance of Work with Contract within 3 days of review.
 - .2 Submit 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 Ensure manufacturer's representative of curtain wall of glass is present before and during critical periods of installation construction of field joints testing.
 - .4 Schedule site visits to review Work at stages listed:

- .1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
- .2 Twice during progress of Work at 25% and 60% complete.
- .3 Upon completion of Work, after cleaning is carried out.

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 Remove protective material from prefinished aluminum surfaces.
 - .3 Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
 - .4 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.
 - .5 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning. Also see Section 01 35 13 – Special Project Procedure for CSC Security Requirements.

3.6 PROTECTION

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

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- .1 Provide detention / security windows in accordance with the Contract Documents, designated "Option 2". (The complete project shall be executed employing either all Option 1 type or all Option 2 type windows). The Work of this Section shall include but not be limited to the following:
 - .1 Hybrid steel and aluminum windows, thermally broken, fixed, and fixed with secured air dampers with security screens and carceral quality operating hardware.

1.2 RELATED REQUIREMENTS

- .1 Section 05 50 00 – Metal Fabrications.
- .2 Section 07 21 29.03 – Sprayed Insulation – Polyurethane Foam.
- .3 Section 07 26 00 – Vapour Retarders and Air Barriers
- .4 Section 07 62 00 – Sheet Metal Flashing and Trim
- .5 Section 07 92 00 – Joint Sealing
- .6 Section 08 80 50 – Glazing and Laminated Polycarbonate

1.3 QUALITY ASSURANCE, PERFORMANCE REQUIREMENTS**.1 References:**

Applicable, latest dates, names and titles of general standards are referred to by accepted abbreviations.

- .1 AISI Type 304 - Stainless Steel
- .2 ASTM E283
- .3 ASTM E330
- .4 ASTM E331
- .5 ASTM E547
- .6 AAMA/NWWDA-101/I.S.2-97
- .7 AAMA-1503.1 - Test Methods for Performance of Exterior Windows, Curtain Walls, and Doors.
- .8 ASTM A 627-03 - Testing of security steel (tool-resisting steel - round and flat bars).
- .9 ASTM F 1592-01 - Testing of detention/security vision system.
- .10 NFRC 100: 2001 - Procedure for determining fenestration product U-factors. (Simulation only).

- .2 Performance Requirements: Windows shall meet or exceed the following requirements;
- .1 Air Infiltration Test: ASTM E 283-99; maximum air infiltration of 0.02 cfm/ft² of frame area at a static air pressure difference across the window unit of 1.57 psf (25 mph) and 0.04 cfm/ft² at a static air pressure difference of 6.27 psf (50 mph).
 - .2 Water Resistance Test: ASTM E 331-00; no water penetration for 15 minutes when window is subjected to a water flow rate of 5 U.S.gal/h-ft² at a static air pressure difference of 10.50 psf (65 mph).
 - .3 Uniform Load Structural Test: ASTM E 330-02; no permanent deformation or breakage of any component that will render the window assembly inoperable when subjected to positive and negative static air pressure difference of 105 psf (204 mph). Tested on a maximum window size of 72" x 72" glazed with 1" double sealed unit (1/4" clear tempered + air + 1/4" clear tempered).
 - .4 Performance Requirements: AAMA/NWWDA 101/I.S.2-97; the aluminum window shall comply with product designation; F-HC70.
 - .5 Thermal Requirements: NFRC 100: 2001; the thermal transmittance of the window frame (U-factor) should not be more than 0.77 btu/h-ft²-F and the thermal transmittance of the window assembly should not be more than 0.59 btu/h-ft²-F when calculated as per the simulation procedure outlined in NFRC 100: 2001 for a window of
15 19/32" x 47 5/8" glazed with 1" double sealed unit (1/4" clear tempered + air + 1/4" clear tempered).
 - .6 Condensation Resistance Factor Test: AAMA 1503.1-98; the condensation resistance factor (CRF) should be at least 58 for a fixed window glazed with a double sealed unit.
 - .7 Deflection & Drop Weight Test: ASTM A 627-03; test 1" dia. round, tool-resisting steel security bar by performing "Deflection Test" and "Drop Weight Test".
 - .8 Standard of Quality: Products shall meet the standard of quality as defined in Part 2 – 2.1.
- .3 Manufacturer: All windows and other related components shall be the products of a well known manufacturer regularly engaged in the manufacture of high quality detention/security windows, security screens and composite tool-resistant steels for security application, for at least 10 years.
- .4 Factory Test of Mock-Up: A mock-up of a window to be made in the window fabricator's factory and tested in the presence of client's representatives to allow inspection. The mock-up is tested for weather and security performances as specified. The unit shall be tested and all corrections shall be made until the unit passes the tests.
- .5 Site Mock-Up: Prior to general window installation, erect a full size mock-up at the project site of a typical condition as selected by the Architect. Each mock-up is to be constructed with adjacent materials such as masonry, metal siding, etc., showing relationship to windows. Locate mock-ups on site where directed by G.C. Remove and dispose mock-ups off-site when directed by G.C.

1.3 SUBMITTALS

- .1 Product Data: Submit manufacturer's specifications, recommendations and standard details for each type of window required. Include information on fabrication, finishing, hardware and accessories.
- .2 Shop Drawings: Submit drawings including window elevations and full size details of every typical member. Show anchors, hardware, operators and accessories which are not fully detailed in manufacturer's product data. Include glazing details.
- .3 Samples: Submit a typical, complete window sample of specified finish. Submit additional samples which will show fabrication techniques and workmanship, and design of hardware and accessories when requested.
- .4 Certificates: Where windows and security bars have been tested in accordance with specified tests and comply with requirements, provide certification of compliance with such tests; otherwise, perform required tests through a recognized testing agency and provide certified test results.
- .5 Laboratory Test Reports and Certificates: Shall be submitted by the manufacturer to the architect, for review and approval, 2 weeks prior to bid closing. An omission of an item or items does not relieve the manufacturer from this responsibility and for compliance with the contract documents of which this is a part.

1.4 GUARANTEE

- .1 In accordance with Article on "GUARANTEES" of the "General Conditions Governing All Contracts," the manufacturer hereby guarantees that all work specified in this section will be free from defects of materials and workmanship for a period of three (3) years.
- .2 Furnish a guarantee in the form specified in article on "GUARANTEES" of the "GENERAL CONDITIONS GOVERNING ALL CONTRACTS".
- .3 The following types of failure will be adjudged as defective work:
 - .1 Structural failures, including excessive deflections.
 - .2 Excessive leakage or air infiltration.
 - .3 Deterioration of metals and finishes beyond normal weathering.

1.5 SPARE PARTS

- .1 Provide, at the end of each phase, hardware and fitting items equivalent to 10% of those installed in said phase to the Departmental Representative. Spare parts should be the same as the list provided with the shop drawings. Workshop drawings of the proposed product must comply with Section 01 33 00 - Documents and Samples to be Submitted and clearly identify spare parts to be submitted at the end of the project, and report the total count (par part).

1.6 TRAINING

- .1 Training must be organized and provided by the manufacturer of the submitted fenestration product(s) to the personnel designated by the Departmental Representative in order to instruct and communicate maintenance and replacement procedures to the maintenance team.

PART 2 – PRODUCTS

2.1 STANDARD OF QUALITY

The standard of quality for the products to be used on this project has been established as follows:

- .1 Manufacturer: Subject to compliance with requirements, provide security detention windows as manufactured by, but not limited to, C.M. Security Group Inc., (Tel. Toll-Free: 1-800-465-2674) as specified, or approved equal.
- .2 Request for Approved Equal: All requests for approval, as equal, of a product not listed in the bid documents must be submitted to the architect in writing 14 days prior to the published bid opening. This application for approval must be accompanied by supporting documents for each of the references listed under Section 1.02 Quality Assurance and Performance Requirements and Section 1.03 Submittals from an accredited third party testing facility.
- .3 Issuance of Addenda: If the submittal is approved by the architect, an addendum will be issued to all prospective bidders. Issuance of said addendum is a representation that the architect, in the exercise of his professional discretion, has established that the product submitted for approval meets or exceeds the expressed requirements.
- .4 Interior Stainless Steel Glass Stops (if required): Provide removable "L" profile glass stops secured to the stainless steel security element by security fasteners as shown and specified.
- .5 Exterior Aluminum Glass Stops: Extruded aluminum snap-in to the main frame. Secured with 2 security screws per vertical glass stop.
- .6 Assembly: The thermally broken aluminum window and the stainless steel security element shall be attached together using stainless steel rivets, spaced at 6" c/c. Sealant must be applied between aluminum and stainless steel mating surfaces.

2.2 MATERIALS

- .1 Stainless Steel: Type 304 14 GA standard 2B (bright cold rolled) finish, shall be specially formed to the profiles and sizes shown on the drawings for head, sill, jambs, glass stops and trims.
- .2 Aluminum Extrusions: Horizontal or vertical muntins, main frame, glass stops and trims shall be specially designed aluminum extrusion 6063-T5, no less than 22,000 psi ultimate tensile strength, with a nominal thickness of 0.125" for muntin and 0.093" for main frame.

- .3 Fasteners: Non-magnetic stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with window members, trims, hardware and anchors.
 - 1. Provide stainless steel, torx tamper resistant 1/4"-20 screws spaced at 6" c/c or stainless steel "pop" rivets for exposed fasteners.
- .4 Anchors, Clips and Window Accessories: Depending on design strength requirements, fabricate units of non-magnetic stainless steel or rust inhibitive primer painted mild steel.
- .5 Sealant: Provide type recommended by window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Comply with Section 07900 for installation of sealant.
- .6 Thermal Break: Main frame aluminum extrusion shall be two-part designed with special channel shape and shall be joined by "poured in place" polyurethane resin.
- .7 Glazing Strip Materials: At manufacturers' discretion provide:
 - .1 Medium to firm type sponge neoprene glazing tape, ASTM D 1056-85 designation: 2A3 to 2A5
 - .2 Extruded EPDM, bulb type glazing gasket
 - .3 Pre-shimmed butyl tape.

2.3 WINDOW TYPES

- .1 Fixed, Thermally Broken Windows: Units composed of a stainless steel interior security element attached to a thermally broken aluminum window frame.
- .2 Pivoting window secured air damper unit, protected from interior and exterior sides by perforated stainless steel sheet security screens (as specified in Section 05 50 00 – Metal Fabrication), and equipped with tamperproof and vandal proof carceral quality operating hardware.

2.4 FABRICATION AND ACCESSORIES

- .1 General: Provide manufacturer's standard fabrication and accessories which comply with indicated standards, except to extent more stringent requirements are indicated. Include all items for assembly and anchorage of window units, and prepare for glazing. Provide perimeter frames, sill, jamb and head as shown and specified.
- .2 Welding: All welding shall be done by qualified welders, using latest welding techniques and designs compatible with requirements for the window performance as specified.
- .3 Window Design Sizes and Profiles: Window design, required sizes for window units and profile requirements are indicated on drawings. Details on drawings are based upon standard details. Similar details by other pre-qualified manufacturers will be acceptable, provided they comply with window design, size, profile and performance requirements as specified.
- .4 Coordination of Fabrication: Where possible, check actual window openings by accurate field measurement before fabrication. Where necessary, proceed with

fabrication without field measurements, based on approved shop drawings and coordinate installation tolerances to ensure proper fit of windows.

- .5 Drainage: Provide means of drainage for water and condensation which may accumulate in members of window units.
- .6 Mullions: Provide mullions as shown, matching window units, and complete with anchors for support and installation. Allow for erection tolerances and provide for movements of window units due to thermal expansion and building deflections.
- .7 Operable parts: The windows of the cells or other rooms must be equipped with an opening frame to allow the inmate to ventilate. The free ventilation area of the window must be as shown on the plans, while having the maximum width achievable under the existing conditions.
- .8 Fly screens: Operable windows must be fitted with 18x16 mesh aluminum fly screens. The fly screens must be of commercial quality within the meaning of the Screen Manufacturer Association (SMA) and comply with SMA 6001-2002. The fly screens must be added on the interior side of the security screens placed on the exterior side the secured air dampers and be secured to the frame by means of safety screws to facilitate the detection of possible sabotage.
- .9 Security screens: In addition to being provided with a fly screen, the operable window parts must be provided with security screens in the form of perforated steel plates. Refer to section 05 50 00 – Metal Fabrications.
- .10 Accessories: Window accessories must not be easily disassembled or torn off. The use of counterweights is prohibited. On the other hand, concealed locking bolts, if necessary, can be considered. Their use, when applicable, must be done in such a way as to protect them from the weather or infiltrations, and must in no case present any added risk of possible blockage or malfunction. Limit levers as much as possible.

2.5 WINDOW FINISH

- .1 Stainless steel security elements; provide standard No. 2B stainless steel finish (bright cold rolled) for the frame, glass stops and interior trims and clear anodized finish (0.0007" minimum thickness) for the aluminum muntins.
- .2 Thermally broken aluminum weather barrier; provide clear anodized finish (0.017mm minimum thickness) for the frame, glass stops and exterior trims.
- .3 Provide finish to match approved sample.

PART 3 – EXECUTION

1.1 INSTALLATION

- .1 Fixed and ventilating window groupings shall be shop-assembled to the fullest extent possible.
- .2 Installation in the field to be executed entirely from the exterior of the buildings

- .3 Remit temporary polycarbonate screens to Owner for installation on interior side of window openings. Ensure temporary screens are in place, and acquire Owner's approval to commence the installation.
- .4 Installation to proceed in Phases as indicated on the drawings, and as approved by the Owner.
- .5 Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators, and other components of the work.
- .6 Set units plumb, level and true to line, without warp or rack of frames or sash. Anchor securely in place by methods shown on shop drawings. Separate zinc-coated steel and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials, by bituminous or paint coating or plastic materials.
- .7 All faces of vertical frames to align precisely with the vertical faces of the existing structural wall openings, as indicated on drawings
- .8 The junction between the back of the window frame and the face of the wall opening to be 2mm or less. Fill this joint flush with sealant, backed by compressible tape.
- .9 Set sill members (when required) and other members with joint fillers or gaskets, to provide weather-tight construction. Refer to "Joint Sealer" section of Division 7 for sealants, fillers, and gaskets to be installed concurrently with window units. Coordinate installation with wall flashings and other components of the work.
- .10 Clean surfaces promptly after installation of windows, exercising care to avoid finish damage.
 - .1 Remove excess sealant, dirt and other substances.
- .11 After erection of the windows, clean and touch-up any abraded surfaces, as approved by the window manufacturer, to match factory-applied finish.
- .12 Installer shall advise contractor of protection and other precautions required through remainder of construction period, to ensure that window units will be without damage or deterioration (other than normal weathering) at time of substantial completion.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 Glazing for slit windows, and glazing for the replacement of glazing in the guard stations.

1.2 RELATED REQUIREMENTS

- .1 Section 07 92 00 – Joint Sealing.
- .2 Section 08 44 13 – Glazed Aluminum Curtain Walls.
- .3 Section 08 50 10 – Hybrid Stainless Steel / Aluminum Windows

1.3 REFERENCES

- .1 ASTM International
 - .1 ASTM C542-05(2011), Standard Specification for Lock-Strip Gaskets.
 - .2 ASTM D2240-15, Standard Test Method for Rubber Property - Durometer Hardness.
 - .3 ASTM E330/E330M-14, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 - .4 ASTM F1233-08(2013), Standard Test Method for Security Glazing Materials and Systems.
 - .5 ASTM F1592-12, Standard Test Methods for Detention Hollow Metal Vision Systems.
 - .6 ASTM F1915-05(2012), Standard Test Methods for Glazing for Detention Facilities.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.2-91, Flat, Clear Sheet Glass.
 - .3 CAN/CGSB-12.3-91, Flat, Clear Float Glass.
 - .4 CAN/CGSB-12.8-97, Insulating Glass Units.
 - .5 CAN/CGSB-12.8-97 (Amendment), Insulating Glass Units.
 - .6 CAN/CGSB-12.9-91, Spandrel Glass.
 - .7 CAN/CGSB-12.10-76, Glass, Light and Heat Reflecting.
 - .8 CAN/CGSB-12.11-90, Wired Safety Glass.
- .3 Environmental Choice Program (ECP)
 - .1 DCC-045-95 (R2005), Sealants and Caulking Compounds.
- .4 Glass Association of North American (GANA)
 - .1 GANA Glazing Manual - 2008.
 - .2 GANA Laminated Glazing Reference Manual - 2009.

- .5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

- .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.4 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 glass, sealants, and glazing accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Submit two (2) samples of 100 mm long of sealant material.
 - .3 Submit two (2) samples of 300 X 300 mm of each glazing type.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
 - .1 Submit testing analysis of glass under provisions of Section 01 45 00 - Quality Control.
 - .2 Submit shop inspection testing for glass.

1.5 CLOSEOUT SUBMITTALS

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

1.6 QUALITY ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

- .2 Store and protect glazing and frames from nicks, scratches, and blemishes.
- .3 Protect prefinished aluminum surfaces with wrapping strippable coating.
- .4 Replace defective or damaged materials with new.

1.8 AMBIENT CONDITIONS

- .1 Ambient Requirements:
 - .1 Install glazing when ambient temperature is 10 degrees C minimum. Maintain ventilated environment for 24 hours after application.
 - .2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.9 WASTE MANAGEMENT AND DISPOSAL

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

1.10 WARRANTY

- .1 For work in this Section 08 80 50 – Glazing and laminated polycarbonate, the 12-month warranty period set out in the General Conditions is extended to 120 months.
- .2 Provide a written document jointly prepared and signed by the manufacturer and the installer and issued in the name of Canada, ensuring the work against defects in materials, workmanship and installation for the period specified above.

Part 2 Products

2.1 MATERIALS

- .1 Design Criteria:
 - .1 Ensure 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 to ASTM E330/E330M, acting normal to plane of glass.
 - .3 Limit glass deflection to 1/200 flexural limit of glass with full recovery of glazing materials.
- .2 Flat Glass:
 - .1 Type 1: Clear, select quality glass, tempered, 6 mm thick.
 - .1 Sintered ceramic coating (glazed coloured enamel) on side 2: white dot pattern, 30% opacity
 - .2 Type 2: Clear, select quality glass, tempered, 6 mm thick.

- .1 Soft metal coating, Low E, obtained by vacuum metallization on side 3 (up to coefficient $U_g=1,0 \text{ W/(m}^2\cdot\text{K)}$)
- .3 Type 3: Clear, select quality glass, tempered, 6 mm thick.
- .4 Type 4: Clear, select quality glass, tempered, 6 mm thick.
 - .1 Film applied by cathode sputtering on side 4, light grey colour.
- .3 Laminated Polycarbonate Sheets
 - .1 Type 5: clear polycarbonate 12.7mm thick
 - .1 Resistance to Flexural Stress: 13,500psi (ASTM D790)
 - .2 Specific Gravity: 1.20 (ASTM D792)
 - .3 Luminous Transmittance: (medium), 88% (ASTM D1003)
 - .2 Type 6: clear polycarbonate 32mm thick
 - .1 4 plies: 3mm-12.7mm-12.7mm-3mm, with polyurethane peel between each layer
 - .2 Luminous Transmittance: 67% (ASTM D1003)
 - .3 Bullet Resistant Security Level 3 (.44 Magnum) per UL752
- .4 Insulating Glass Units:
 - .1 Construction:
 - .1 Double-sealed, with two (2) panes, 25 mm thick over all.
 - .2 Air space thickness: polycarbonate spacer, black colour, steel-reinforced with conductivity de $0.19 \text{ W/m}^2 \text{ K}$, 13.5 mm thick.
 - .3 Inert gas space: argon.
 - .2 Type **VT**: Thermos glass for exterior windows.
 - .1 Interior glazing : Type 4.
 - .2 Exterior glazing : Type 1.
 - .3 U-value in centre: not more than $1.306 \text{ W/m}^2\cdot^\circ\text{C}$.
 - .4 Visible Light Transmission: 55.5%
- .5 Glazing for guard stations:
 - .1 Type **V1**: Interior glazing:
 - .1 Flat glass Type 4 – polycarbonate type 5 – Flat glass Type 4
 - .2 Type **V2**: Exterior glazing, insulated, bullet-proof:
 - .1 Composition, from the exterior side:
 - .1 Thermos glass Type **VT**
 - .2 Laminated polycarbonate Type 6 (32mm)
 - .3 Flat glass Type 4
- .6 Sealant: in accordance with Section 07 92 00 – Joint Sealants.
 - .1 Maximum VOC level: according to guideline DCC-045.
 - .2 Ensure that sealants comply with limitations and restrictions in guideline DCC-045 regarding chemical composition.

2.2 ACCESSORIES

- .1 Setting blocks: neoprene, 80-90 Shore A durometer hardness to ASTM D2240, length of 25 mm for each square meter of glazing.
- .2 Spacer shims: neoprene, 50-60 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.
- .3 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, black colour.
 - .2 Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume 2 %, designed for compression of 25 %, to effect an air and vapour seal.
- .4 Glazing beads: resilient, polyvinyl chloride, extruded form, colour suiting rabbet.
- .5 Extruding joints with locking tabs: to ASTM C542.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for glazing installation in accordance with manufacturer's written instructions.
 - .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 Visually inspect substrate in presence of Departmental Representative.
 - .4 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .5 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

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 EXTERIOR GLAZING - DRY METHOD (PREFORMED GLAZING)

- .1 Manufacturer's Instructions: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

- .2 Perform work in accordance with GANA Laminated Glazing Reference Manual for glazing installation methods.
- .3 Cut glazing tape to length; install on glazing light. Seal corners by butting tape and sealing junctions with sealant
- .4 Place setting blocks at $\frac{1}{4}$ points, with edge block maximum 150 mm from corners.
- .5 Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- .6 Install removable stops without displacing glazing tape. Exert pressure for full continuous contact.
- .7 Trim protruding tape edge.

3.4 INTERIOR GLAZING - DRY METHOD (TAPE AND TAPE)

- .1 Perform work in accordance with GANA Laminated Glazing Reference Manual for glazing installation methods.
- .2 Cut glazing tape to length and set against permanent stops, projecting 1.6 mm above sight line.
- .3 Place setting blocks at $\frac{1}{4}$ points, with edge block maximum 150 mm from corners.
- .4 Rest glazing on setting blocks and push against tape for full contact at perimeter of light or unit.
- .5 Place glazing tape on free perimeter of glazing in same manner described.
- .6 Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- .7 Knife trim protruding tape.

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.
 - .1 Remove traces of primer, caulking.
 - .2 Remove glazing materials from finish surfaces.
 - .3 Remove labels.
 - .4 Clean glass and mirrors using approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning. See Section 01 35 13 – Special Project Procedure for CSC Security Requirements, article 19 – Movement of Vehicles.

3.6 PROTECTION

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

- .2 After installation, mark each light with an "X" by using removable plastic tape or paste.
- .1 Do not mark heat absorbing or reflective glass units.
- .3 Repair damage to adjacent materials caused by glazing installation.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 Related Requirements
 - .1 Section 05 50 00 – Metal Fabrication
 - .2 Section 07 62 00 – Sheet Metal Flashing & Trim
 - .3 Section 07 46 13 – Exterior Sheet Metal
 - .4 Section 07 92 00 – Joint Sealing
 - .5 Section 08 44 13 – Glazed Aluminum Curtain Walls
 - .6 Section 08 50 10 – Hybrid Stainless Steel / Aluminium Windows
- .2 Scope of Work
 - .1 Repainting of reused existing exterior sheet metal, if applicable.

1.2 REFERENCES

- .1 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33
- .2 Environmental Protection Agency (EPA)
 - .1 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 - 1995, (for Surface Coatings).
- .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 Master Painters Institute (MPI)
 - .1 MPI Architectural Painting Specifications Manual, 2004.
- .5 National Fire Code of Canada – latest edition.
- .6 Society for Protective Coatings (SSPC)
 - .1 SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.
- .7 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34 .

1.3 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Journeymen: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.
 - .2 Apprentices: working under direct supervision of qualified tradesperson in accordance with trade regulations.

- .2 Mock-Ups:
 - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
 - .1 Provide 1000 mm x 1000 mm mock-up. Prepare and paint designated surface, area, room or item (in each colour scheme) to specified requirements, with specified paint or coating showing selected colours, gloss/sheen, textures.
 - .2 Mock-up will be used:
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application and workmanship to MPI Architectural Painting Specification Manual standards.
 - .3 Locate where directed where indicated
 - .4 Allow twenty-four (24) hours for inspection of mock-up before proceeding with work.
 - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may remain as part of finished work.
- .3 Pre-Installation Meeting:
 - .1 Convene a pre-installation meeting one week prior to beginning work of this Section, in accordance with Section 01 32 16.07 - Construction Progress Schedule– Bar (GANTT) Chart, to review the following :
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Coordination with other building sub trades.
 - .4 Review manufacturer's installation instructions and warranty requirements.
- .4 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit product data and instructions for each paint and coating product to be used.
 - .2 Submit product data for the use and application of paint thinner.
 - .3 Submit two (2) copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application and curing.
- .3 Samples:

-
- .1 Submit full range colour sample chips to indicate where colour availability is restricted.
 - .2 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 Architectural Painting Specification Manual standards submitted on following substrate materials:
 - .1 Use sample of each different base material (take minimum thickness prescribed for sample) receiving paint to apply to respective products.
 - .3 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
 - .4 Test reports: submit certified test reports for paint from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
 - .1 Lead, cadmium and chromium: presence of and amounts.
 - .2 Mercury: presence of and amounts.
 - .3 Organochlorines and PCBs: presence of and amounts.
 - .5 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .6 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation application instructions.
 - .7 Closeout Submittals: submit maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals include following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly classification system rating.

1.5 MAINTENANCE

- .1 Extra Materials:
 - .1 Deliver to extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Section 01 78 00 - Closeout Submittals.
 - .2 Quantity: provide one (1) four (4) litre can of each type and colour of primer stain finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
 - .3 Delivery, storage and protection: comply with Departmental Representative requirements for delivery and storage of extra materials.

1.6 ECOLOGICAL DESIGN CRITERIA

- .1 Foam melamine products of this section must have the following certifications:
 - .1 EPD (Environmental Product Declaration)

- .2 Environmental Certification third party developed on the basis of consensus on accepted practices in industry (NSF sustainability standard, UL Environment standards sustainability, FSC, etc.)
- .3 Environmental certification of a third party based on environmental ISO 14040 and 14044

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Packing, Shipping, Handling and Unloading:
 - .1 Pack, ship, handle and unload materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Acceptance at Site:
 - .1 Identify products and materials with labels indicating:
 - .1 Manufacturer's name and address.
 - .2 Type of paint or coating.
 - .3 Compliance with applicable standard.
 - .4 Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
- .4 Storage and Protection:
 - .1 Provide and maintain dry, temperature controlled, secure storage.
 - .2 Store materials and supplies away from heat generating devices.
 - .3 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.
- .7 Remove paint materials from storage only in quantities required for same day use.
- .8 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.
- .9 Waste Management and Disposal:
 - .1 Separate waste materials for reuse recycling in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal.

- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).
- .4 Separate for reuse recycling and place in designated containers Steel Metal Plastic waste in accordance with Waste Management Plan (WMP).
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
- .7 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- .8 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .9 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
 - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
 - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
 - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
- .10 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
- .11 Set aside and protect surplus and uncontaminated finish materials. Deliver to or arrange collection by employees, individuals, or organizations for verifiable re-use or re-manufacturing.

1.8

SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
 - .2 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.

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- .3 Provide minimum lighting level of 323 Lux on surfaces to be painted.
 - .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless pre-approved written approval by Specifying body Paint Inspection Agency Authority and product manufacturer, perform no painting when:
 - .1 Ambient air and substrate temperatures are below 10 degrees C.
 - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
 - .4 The relative humidity is under 85% or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
 - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
 - .6 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
 - .2 Perform painting work when maximum moisture content of the substrate is below:
 - .1 Allow new concrete and masonry to cure minimum of 28 days.
 - .2 15% for wood.
 - .3 12% for plaster and gypsum board.
 - .3 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".
 - .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
 - .3 Surface and Environmental Conditions:
 - .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 to adequately prepared surfaces and to surfaces within moisture limits.
 - .3 Apply paint when previous coat of paint is dry or adequately cured.
 - .4 Additional interior application requirements:
 - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
 - .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 Paint and coating materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 All products forming chosen paint system must comply with MPI X-Green standard.
- .3 Provide paint materials for paint systems from single manufacturer.
- .4 Only qualified products with E3 "Environmentally Friendly" rating are acceptable for use on this project.
- .5 Conform to latest MPI requirements for interior painting work including preparation and priming or print paint.
- .6 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
- .7 Linseed oil, shellac, and turpentine: highest quality product from approved manufacturer listed in MPI Architectural Painting Specification Manual, compatible with other coating materials as required.
- .8 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.
- .9 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:
 - .1 Water-based Water soluble Water clean-up.
 - .2 Non-flammable biodegradable.
 - .3 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
 - .4 Manufactured without compounds which contribute to smog in the lower atmosphere.
 - .5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.

2.2 COLOURS

- .1 Departmental Representative will submit the color selection to the contractor within sixty (60) days of contract award.
- .2 Refer to finish plans for number and location of different colours.
- .3 Selection of colours from manufacturers full range of colours.
- .4 Where specific products are available in restricted range of colours, selection based on limited range.
- .5 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Obtain written approval from for tinting of painting materials.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

- .1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

Level	Gloss @ 60 degrees	Sheen @ 85 degrees
1 - Matte Finish	Max. 5	Max. 10
2 - Velvet-Like Finish	Max. 10	10 to 35
3 - Eggshell Finish	10 to 25	10 to 35
4 - Satin-Like Finish	20 to 35	min.35
5 - Traditional Semi-Gloss Finish	35 to 70	
6- Traditional Gloss	70 to 85	
8 – High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated.

2.5 INTERIOR AND EXTERIOR PAINTING SYSTEMS

- .1 Metal fabrications (steel window frames), and galvanized metal, not chromate passivated.
 - .1 Three (3) coats system, Premium Grade Work
 - .1 One (1) coat of MPI 107 X-Green primer, similar to Sherwin-Williams ProIndustrial Procryl B66W1310 series or approved equivalent
 - .2 Two (2) coats of MPI 153 X-Green finish paint, traditional semi-gloss finish, similar to Sherwin-Williams ProIndustrial DTM Acrylique B66W1151 series or approved equivalent

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 data sheet.

3.2 GENERAL

- .1 Perform preparation and operations for interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise.

3.3 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.

3.4 PREPARATION

- .1 Protection:
 - .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.
 - .4 Protect passing pedestrians, building occupants and general public in and about the building.
- .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.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
 - .1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 - .2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.

- .4 Allow surfaces to drain completely and allow to dry thoroughly.
- .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
- .6 Use trigger operated spray nozzles for water hoses.
- .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .5 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. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes blowing with clean dry compressed air vacuum cleaning.
- .6 Touch up of shop primers with primer as specified in relevant section. Major touch-ups, including cleaning and painting field assemblies, welds, rivets, bolts, nuts and washers and rusted surfaces must be done by supplier of products.
- .7 Caulk gaps around doors and windows before painting.
- .8 Ferrous metal surfaces: Manual sanding in accordance with SSPC-SP2 Hand Tool Cleaning. Remove rust or flaking paint.

3.5 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush roller air sprayer airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
 - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
 - .2 Work paint into cracks, crevices and corners.
 - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
 - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
 - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- .4 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

- .6 Sand and dust between coats to remove visible defects.
- .7 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.

3.6 SITE TOLERANCES

- .1 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

3.7 FIELD QUALITY CONTROL

- .1 Interior painting and decorating work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority and local Painting Contractor's Association. Painting contractor shall notify Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .2 Where "special" painting, coating or decorating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer shall provide as part of this work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to Departmental Representative.
- .3 Standard of Acceptance:
 - .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
 - .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .4 Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .5 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.

3.8 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.

- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

END OF SECTION

This is a summary of the minimum criteria to be respected by the window design and installation sequence:

1.1 **Respects the technical criteria of CSC regarding**

1. Grills, screens and barriers to passage
 - **Reference : critères SCC A-3 / 5.1 & A-3 / 5.3**
2. glazing, windows and operable sashes
 - **Reference : critères SCC A-4 / 4.1 & A-4 / 5.2**

1.2 **Work Procedure**

- .1 method of installation maximizing the amount of work able to be effected from the exterior (temporary polycarbonate screens to be installed at the wall interior for the duration of the installation)
- .2 The window assemblies must be installed entirely from the exterior of the buildings, while the polycarbonate protection screens are in place at the inside wall surface.
- .3 Permissible work from the interior is limited to installation of vent operator mechanism and adjustment.

1.3 **Absence of gaps or hidden spaces**

- .1 Window frame surfaces to be flush with faces of existing wall opening, and frame members sealed against wall. Tolerance: 3mm max

1.4 **Ventilator operating mechanism:**

- .1 robustness and resistance to vandalism of the ventilator and its operating mechanism, carceral quality. * **Reference : critère SCC A-4 / 4.13**

1.5 **Passage of light and natural ventilation:**

- .1 The proposed window assembly must deliver equivalent amounts of natural ventilation and vision glass area as those shown in the drawings (see sheet A11/12).